

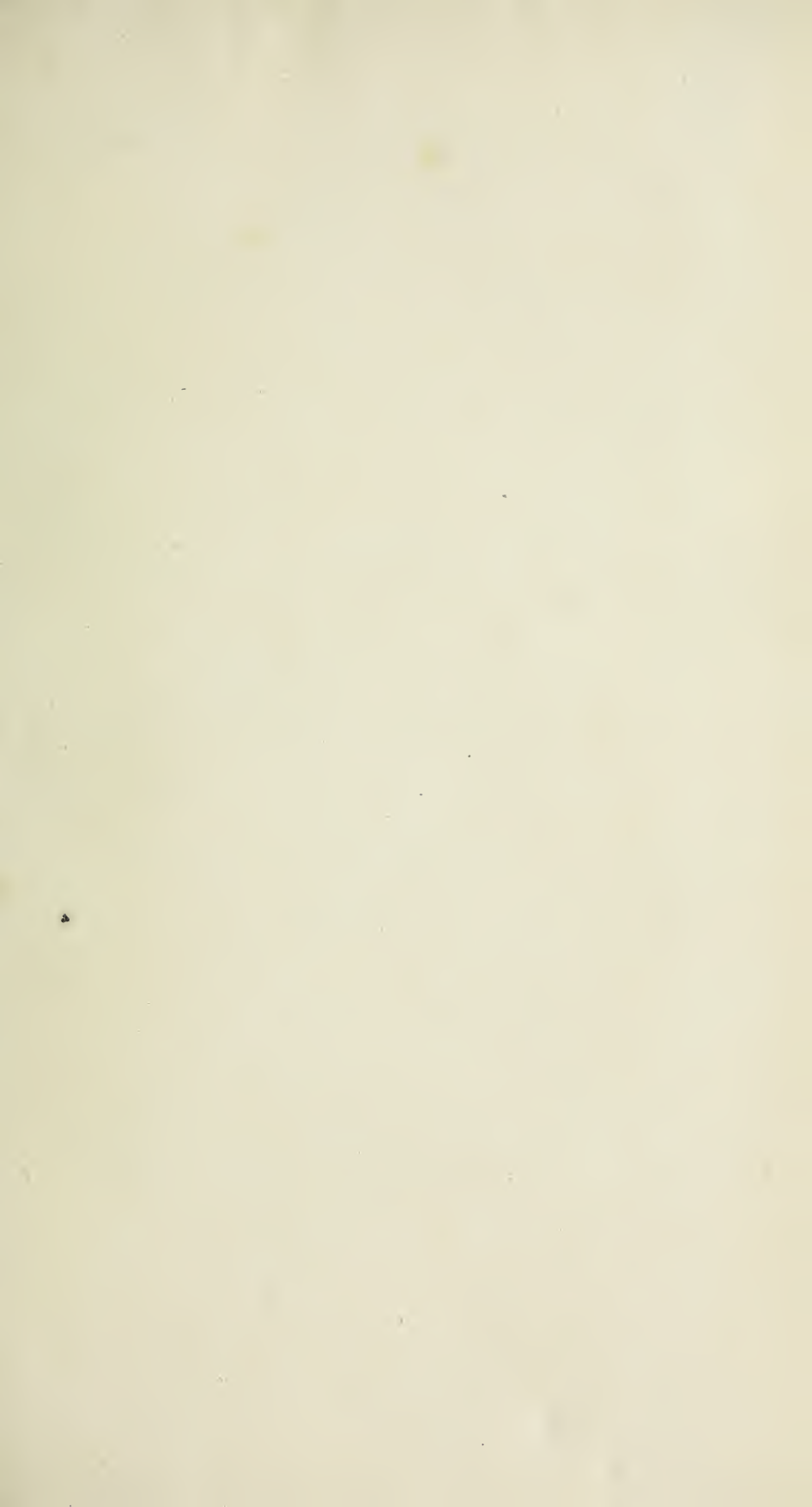


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ENGLISH BOTANY;

OR,

COLOURED FIGURES

OF

BRITISH PLANTS,

WITH THEIR

ESSENTIAL CHARACTERS, SYNONYMS,
AND PLACES OF GROWTH.

TO WHICH WILL BE ADDED,

OCCASIONAL REMARKS.

BY

JAMES SOWERBY, F.L.S.

V O L. III.

L O N D O N:

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MDCCXCIV.



PINGUICULA lusitanica.

*Pale Butter-wort.**DIANDRIA Monogynia.*

GEN. CHAR. *Cor.* ringent, spurred. *Cal.* two lipped, with five segments. *Capsule* of one cell.

SPEC. CHAR. Nectary blunt, shorter than the petal. Stalk hairy. *Capsule* globose.

SYN. *Pinguicula lusitanica.* Linn. *Sp. Pl.* 25. *Huds. Fl. An. ed.* 1. 7.

P. villosa. *Huds. Fl. An. ed.* 2. 8. *With. Bot. Arr.* 17. *Lightf. Fl. Scot.* 77. t. 6.

P. flore minore carneo. *Raii Syn.* * 281.

DR. PULTENEY of Blandford Dorsetshire was so obliging as to send us living plants of this very interesting species in the end of June last, gathered on bogs in his neighbourhood, and we embrace with pleasure the opportunity of clearing up that obscurity in which it has been enveloped.

The root is perennial. Leaves like those of other species of this genus, but rather more delicate and pellucid, reticulated with red veins, and much involute in the margin. Stalks hairy, especially in their lower part, with short spreading glandular hairs tipped with a viscid fluid. Flowers a little nodding. Calyx scarcely two-lipped, but almost equally 5-cleft. Tube of the corolla nearly cylindrical, yellow streaked with red; limb in 5 equal obcordate spreading segments, of a pale lilac; orifice hairy; spur inflated at the base, then contracted, terminating in a very blunt conical figure, and when dried (the only state in which Linnæus saw it) much thicker at the end than at the middle, streaked with red. Stamina flattish. Germen hairy. Stigma blunt, excavated on the upper side. *Capsule* perfectly globular, crowned with the withered stigma.

That this is the real *P. lusitanica* we learn from Portuguese specimens compared with those of Grisley, after which probably (seen in some herbarium) Linnæus described it, for he had it not in his own. That it is *P. villosa* of Lightfoot appears from a specimen from Skye, given to Dr. Smith by the Rev. Mr. Stuart, as well as from the figure in *Fl. Scot.* Neither can there be any doubt of its being what Ray and Hudson intended.

The better to distinguish this species from others we may remark that *P. vulgaris* has an unequal limb, sharp slender spur, and oval capsule: *P. alpina* a very short conical spur, and a long rostrated capsule: *P. villosa* a slender sharp spur, and obcordate compressed capsule, with short round leaves. Its hairy stalk and regular limb agree nearly with *P. lusitanica*, but the *villosa* is the smaller in all its parts.



PYROLA uniflora.

*Single-flowered Winter-green.**DECANDRIA Monogynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Capfule* 5-celled, bursting at the angles.

SPEC. CHAR. Stalk bearing a solitary flower.

SYN. *Pyrola uniflora*. *Linn. Sp. Pl.* 568. *Fl. Dan.* t. 8. very incorrect.

P. scapo unifloro. *Hall. Hist.* 1011.

P. quarta minima Clusii. *Ger. em.* 408.

HAVING in the preceding page determined an obscure plant, we hope in this to afford the British botanist no less pleasure in presenting him with a new one. *Pyrola uniflora*, though a native of the Lapland, Norway, German and Swiss alps, was never supposed to grow in our island till James Brodie Esq. of Brodie-house in Scotland found it in that neighbourhood last summer, when also Mr. James Hoy F. L. S. sent it to the Linnean Society from near Gordon Castle. Both these gentlemen we believe are equally entitled to the honour of its first discovery; to the former we are indebted for recent wild specimens.

This *Pyrola* is found in moist alpine woods: its long branched perennial roots run deep among the moss, which in such places is watered by numerous little rills. Every part is smooth. The stem short, simple, angular, set with a few alternate concave scales, and bearing several roundish, more or less obtuse, ferrated, veiny, petiolate leaves. Stalk terminal, erect, much longer than the stem, angular, bearing seldom more than one concave bractea, with a solitary flower of great elegance, compared by Clusius to that of the *Parnassia* (t. 82), and possessing all the fragrance of Lily of the valley. This flower is in perfection about July. Its corolla is sometimes streaked externally with red, as is the calyx. Linnæus and Haller have well observed that the stamina are not placed regularly with respect to the petals, some of the latter having 3 stamina next them, others 2, and others but 1. The antheræ are of a most curious figure, 4-lobed, with two tubes at the base by which probably the pollen is discharged. The stigma resembles a 5-rayed crown.



A L T H Æ A officinalis.

*Marsh Mallow.**MONADELPHIA Polyandria.*

GEN. CHAR. *Cal.* double ; the external one in about 9 segments. *Arilli* numerous, each containing one feed.

SPEC. CHAR. Leaves simple, downy, slightly 5-lobed.

SYN. *Althæa officinalis.* *Linn. Sp. Pl.* 966. *Huds. Fl. An.* 306. *With. Bot. Arr.* 735. *Relb. Cant.* 264.

A. vulgaris. *Raii Syn.* 252.

SALT marshes, and banks of ditches in the fens afford Marsh Mallows in great abundance. We are obliged to Mr. Jacob Rayer for this wild specimen from Woldham marsh, Kent. It flowers from July to September.

The roots are perennial, long and woody, abounding (as well as the herb) with a pure tasteless colourless mucilage, for which reason its decoction is much used in disorders of the kidneys or bladder, and in all cases where emollients are wanted. The stems are numerous, upright, two or three feet high, round, naked below and purplish; in the upper part covered with numerous alternate leaves, various in breadth, more or less evidently 5-lobed and 5-ribbed, unequally serrated in the margin. From their bosoms arise short dense panicles of not inelegant pale purplish flowers. The outer calyx has often 10 or even 12 divisions, though generally but 9. Nothing can exceed the delicately soft pubescence which clothes every part of this herb, and which consists of minute starry hairs entangled with each other.



U R T I C A pilulifera.
Roman Nettle.

MONOECIA *Tetrandria.*

GEN. CHAR. Male. *Cal.* 4-leaved. *Cor.* none. *Nectary* in the centre, cup-shaped. Female. *Cal.* 2-leaved. *Cor.* none. *Seed* one, polished.

SPEC. CHAR. Leaves opposite, ovate, serrated. Catkins of fruit globose.

SYN. *Urtica pilulifera.* *Linn. Sp. Pl.* 1395. *Huds. Fl. An.* 417. *With. Bot. Arr.* 1070.

U. pilulifera, folio profundius *Urticæ majoris* in modum serrato, femine magno lini. *Raii Syn.* 140.

SENT by Dawson Turner Esq. in July last from Yarmouth, where, as in various parts of the Norfolk and Suffolk coast, this kind of nettle is found growing abundantly among rubbish and stones. Its sting is more painful than either of our common species whose structure is so well illustrated by Mr. Curtis in his *Flora Londinensis*.

This is an annual of very luxuriant growth, about 2 feet high, stem obtusely angular, often purple. Leaves on longish foot-stalks, ovate, sometimes heart-shaped, pointed, very strongly serrated, paler beneath. Flower-stalks axillary, in pairs, those of the male flowers paniced. Their calyx is of four equal leaves. Stamina spreading. Supposed nectary an obsolete concave tubercle in the centre. Female flowers in a round head. Calyx of two hemispherical valves closely embracing the germen, and holding the seed till quite ripe. Seed oval, dark brown, highly polished.

Our specimens seem intermediate between those of *U. pilulifera* and *U. balearica* in the Linnean herbarium, and notwithstanding the opinion of Professor Murray (see *Withering*) we believe these species not to be distinct. *U. Dodartii* appears different enough from both.



J. Smooty del. Dec. 1793.

C R E P I S biennis.

*Rough Succory Hawkweed.*SYNGENESIA *Polygamia-aqualis.*

GEN. CHAR. *Recept.* naked. *Calyx* furrounded with deciduous scales. *Down* simple, generally on a footstalk.

SPEC. CHAR. Leaves runcinato-pinnatifid, rough, furnished at the base with teeth pointing upwards. *Calyx* bristly.

SYN. *Crepis biennis.* *Linn. Sp. Pl.* 1136. *Relb. Cant.* 296. *With. Bot. Arr.* 855.

Hedypnois biennis. *Hudf. Fl. An.* 342.

Hieracium maximum Chondrillæ folio asperum.
Raii Syn. 166.

FOUND in a chalky soil, and communicated from near Bury by William Mathew Esq. The root is biennial, spindle-shaped, flowering about June or July of the second year. Stem erect, three or four feet high or more, angular, rough, leafy, branched in the upper part, often purplish below. Radical leaves several, on long purplish footstalks, obovate, lyrato-dentate; those on the lower part of the stem runcinate, with many small sharp scattered teeth; the uppermost leaves more deeply pinnatifid, sessile, dilated and half embracing the stem at their base, with several sharp ascending teeth. All the leaves are rough, especially their mid-ribs beneath, with projecting bristles. Many alternate flower-stalks terminate the stem, the lowermost branched, making a sort of corymbus, each with a linear leaf at its base. The external calyx is lax, somewhat membranous in the margin, slightly bristly on the back, and half as long as the inner one, which is erect, more bristly on the back, and woolly at the base. The corolla is externally reddish. Florets 5-toothed, closing in the afternoon. Styles brownish. Seeds striated, and so much lengthened out into a beak that the down may almost be called stipitate. This down appears rough when highly magnified.—Sometimes, as Dr. Stokes well remarks, the calyx is smooth or nearly so, which is partly the case in Linnæus's own Scanian specimens.



Taraxacum officinale L.

ASPLENIUM Ruta-muraria.

White Maiden-hair or Wall-rue.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fruſifications* in ſcattered lines. *Involucrum* originating laterally from a vein, and burſting inwardly (that is towards the nerve). *Smith Mem. of the Turin Acad. Vol. 5.*

SPEC. CHAR. Frond alternately twice compound; leaflets wedge-shaped notched.

SYN. *Asplenium Ruta-muraria.* *Linn. Sp. Pl. 1541.*
Hudſ. Fl. An. 453. With. Bot. Arr. V. 3. 53.
Relb. Cant. 389.

Ruta muraria. Raii Syn. 122.

OLD walls and ſhady rocks produce this little fern not unfrequently, varying much in ſize according to the degree of nourishment, or rather moiſture, that it meets with. The fruſtifications may be found early in ſummer in the beſt ſtate for examination, when the membrane which covers each line is about to burſt. The genera of ferns can only be determined in that early ſtate, as many whoſe involucra are widely different have the back of their fronds covered in an advanced ſtate with one confuſed maſs of capſules, and have hence been erroneouſly referred to the genus of *Acroſtichum*, as even the plant before us might be if only ſeen in ſuch a ſtate. This is not one of the moſt eaſy to be determined in any ſtate, but if carefully examined it will be found that the membrane always burſts towards an adjoining vein or nerve, and never towards the margin of the leaf without an intervening vein.

The root is perennial, of many dark thready fibres. Stalks upright. Fronds thick and rigid, a little inclined, of a dark glaucous green, ſmooth in every part. *Involucrum* notched in the margin.





CINERARIA palustris.

Marsh Flea-wort.

SYNGENESIA *Polygamia-superflua.*

GEN. CHAR. *Receptacle* naked. *Seed-down* simple. *Cal.* simple, of many equal scales.

SPEC. CHAR. Flowers corymbose. Leaves broadly lanceolate, dentated or sinuated. Stem shaggy.

SYN. *Cineraria palustris.* *Linn. Sp. Pl.* 1243. *Huds. Fl. An.* 369. *With. Bot. Arr.* 919. *Relb. Cant.* 320.

Conyza foliis laciniatis. *Raii Syn.* 174.

THIS, though by no means a common plant, is found in many ditches and wet marshy places in the fens. Mr. Woodward favoured us with this specimen in the middle of June last from near Hadiscoe in Norfolk; it grows also on St. Faith's Newton bogs near Norwich.

The large fibrous perennial root runs deep into the muddy bottoms of ditches, and throws up high above the surface of the water one very stout principal stem, with a few lesser ones, all of them erect, unbranched, with many angles and striated between, clothed with thick soft shaggy hair, covered from top to bottom with numerous alternate lanceolate leaves, and terminated by a leafy corymbus of bright yellow flowers with lemon-coloured rays. The leaves are slightly viscid and hairy, irregularly dentated, and often sinuated. The flowers agree perfectly with the character of *Cineraria*, though once referred by Linnæus to the genus *Othonna*. All the hairs of this plant are pellucid, and finely jointed like a *Conserva*.



CINERARIA integrifolia.

*Mountain Flea-wort.*SYNGENESIA *Polygamia-superflua.*

GEN. CHAR. *Recept.* naked. *Down* simple. *Cal.* simple, of many equal scales.

SPEC. CHAR. Leaves oblong, obsoletely denticulated, shaggy. Flowers in a simple involucreted umbel.

SYN. *Cineraria integrifolia. With. Bot. Arr.* 920. *Murr. Syst. ed.* 14. (β *pratensis*) 765. *Jacq. Fl. Austr.* t. 180.

C. alpina. Hudf. Fl. An. 370. *Relb. Cant.* 320. *tab. Linn. Sp. Pl.* (var. ν) 1243.

Jacobæa Pannonica folio non laciniato. Raii Syn. 178.

GATHERED by the Rev. Mr. Hemsted on Gogmagog hills and Newmarket heath, where, as on many other chalky downs of England, this plant is to be found flowering in May and June.

Root long and thready, perennial. Radical leaves numerous, spreading on the ground, ovate, spatulate, or obovate occasionally, generally lengthened out at the base, reflexed and denticulated in the margin, clothed with loose shaggy wool; those on the stem differ in being narrower, and alternate. Stem from six to twelve inches high, erect, simple, furrowed, woolly, bearing a few pedunculated flowers in a simple umbel, with an involucre of a few lanceolate, pointed, almost naked, leaves. The scales of the calyx are nearly naked, and have a membranous margin. Seeds hairy. Down simple, roughish. The florets of the radius are generally broadest in the middle, or nearly oval.

Cineraria alpina α *Linn. Sp. Pl.* is *Senecio alpinus* of the *Suppl. p.* 371, a very different plant, whose history in the last mentioned place is terribly confused, No. 67 of Haller being *Senecio Doronicum*, and No. 68 our *Cineraria integrifolia*. No. 63 of Haller is (according to Mr. Davall) its true synonym.

Our plant never approaches the appearance of *C. integrifolia* α , *alpina*, *Murr. & Jacq. t.* 179, nor can we suppose that variety to belong to any thing else than Jacquin's *C. longifolia*, t. 181.



SALVIA pratensis.

Meadow Clary.

DIANDRIA Monogynia.

GEN. CHAR. *Cor.* irregular. *Filaments* attached laterally to a little footstalk.

SPEC. CHAR. Leaves oblong, heart-shaped at the base, crenated; the uppermost embracing the stem. Bractææ minute. Summit of the corolla glutinous.

SYN. *Salvia pratensis.* *Linn. Sp. Pl.* 35. *Huds. Fl. An.* 10. *With. Bot. Arr.* 21.

Sclarea pratensis foliis ferratis. *Raii Syn.* 237.

THE meadow clary is one of our more specious, as well as of our most scarce plants of British growth. Mr. Jacob Rayer gathered this specimen near Cobham in Kent, the seat of Lord Darnley. Dr. Stokes mentions it as common in Surry and Suffolk; we have had it too from Oxfordshire. It flowers in June and cannot easily be overlooked.

Root perennial. Leaves oblong, nearly smooth, irregularly crenated, wrinkled and veiny; the radical, and lower stem-leaves, on longish footstalks, and sometimes sinuated; the uppermost sessile, embracing the stem, sharply pointed. Long whorled spikes of large blue flowers (6 of them in a whorl) terminate the stem and branches, with a pair of very small heart-shaped, acuminate bractææ to each whorl, whence Linæus defines it *verticillis subnudis*, the bractææ being so much less conspicuous than in most other species. The flower-stalks and calyx, as well as the apex of the corolla, are hairy and viscid. This is not a very aromatic species.



SALVIA verbenaca.

*Wild English Clary.**DIANDRIA Monogynia.*

GEN. CHAR. *Cor.* irregular. *Filaments* attached laterally to a little footstalk.

SPEC. CHAR. Leaves serrated, smoothish. Corolla much more contracted than the calyx.

SYN. *Salvia verbenaca.* Linn. *Sp. Pl.* 35. *Hudf. Fl.* An. 10. *With. Bot. Arr.* 22. *Relb. Cant.* 10.

Horminum sylvestre Lavandulæ flore. *Raii Syn.*

237.

COMMON on chalky and gravelly soils, as about Charlton. The whole plant is of a deeper green than *Salvia pratensis*, and the flowers of a darker blueish purple; they are also much smaller, and by far less conspicuous.

The root is perennial, strong and woody. Radical leaves on footstalks, sinuated and crenate; those on the stem sessile, sharply and grossly serrated. Bractææ entire, heart-shaped, acute, larger in proportion to the flowers than in *S. pratensis*. The flowers appear in June, and may be found even till October. Our figure expresses their structure.

The herb and flowers prove very aromatic upon being rubbed. The seeds are black and smooth, producing a great quantity of soft tasteless mucilage when moistened, whence they become serviceable for removing extraneous matter from the eyes. If put under the eyelid for a few moments, the tears dissolve their mucilage, which envelops any sand or dust that may be in the way, and brings it out safely. Gerarde has noticed this.



LICHEN fanguinarius.

Sanguineous Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

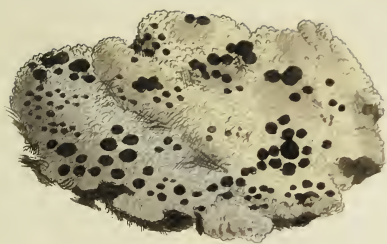
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous, white and polished. Tubercles black, destitute of a border, bright red within.

SYN. Lichen fanguinarius. *Linn. Sp. Pl.* 1607. *Huds. Fl. An.* 524.

GATHERED copiously by Dr. Smith on the granite rocks of Cromford Moor near Matlock, though rare elsewhere. We have been very sparing of synonyms to this species, because scarcely any author seems to have understood it. Linnæus confounded together several species of Lichen, under the name of fanguinarius, which in our opinion are distinct, especially one with a thin greyish ground, and marginated tubercles, found on the bark of smooth young trees, and another with a thick greenish crust, found on rocks. In this Messrs. Hudson, Lightfoot, Relhan and Withering follow him without any discrimination. We should dissent from these respectable authorities with great diffidence, if they appeared to have examined the matter at all. What we here offer is the true *L. fanguinarius*, on the authority of the description in *Sp. Pl. ed. 1 and 2*, as well as of the *Linn. Herbarium* (in which there is a specimen of it on the bark of a tree), and may be certainly distinguished by the following marks:—

The crust is white and polished, not mealy, often of a considerable thickness, its surface consisting of minute unequal knobs or *ruga*, its substance very white internally, though sometimes stained with a most vivid vermilion hue. The tubercles are very various in size, flat, and imbedded at first among the inequalities of the crust, but soon rising above it, and becoming very convex, even globose, without any perceptible border, very black, scarcely shining. If their black surface be pared off, a thicker layer of grey appears, and under that a mixture of white and red, appearing to be the crust of the plant elevated into the centre of the tubercle, and so becoming more constantly (though not infallibly) red than it is of itself in other parts.



Handy del. 179.

LICHEN tartareus.

Tartareous Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

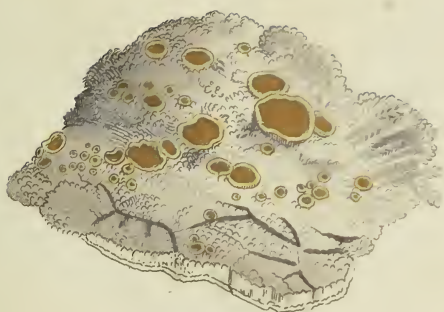
SPEC. CHAR. Crustaceous, whitish. Shields yellow, with a white margin.

SYN. Lichen tartareus. *Linn. Sp. Pl.* 1608. *Huds. Fl. An.* 529. *With. Bot. Arr. V.* 3. 180.

Lichenoides crustaceum et leprosum, acetabulis majoribus luteis, limbis argenteis. *Raii Syn.* 71. *Dill. Musc.* 132. t. 18. f. 13.

FREQUENT on rocks in Scotland and the north of England. This is the largest of our crustaceous Lichens. The crust has a tuberculated surface, and is externally of a greyish white, though snow-white within. In thickness it varies from an inseparable film running over mosses and turf, and assuming their form, to a solid substance of full a quarter of an inch or more. Its diameter is often 6, 8 or 10 inches. The shields are from a line to half an inch in breadth, flat, smooth, not shining, of a yellowish buff-colour, with a white elevated, often rugged, margin. These shields prove occasionally proliferous, or aggregate.

Lichen tartareus may be known, even without fructification, by a peculiar pungent alkaline smell when moistened. It is much used in dyeing. The gatherers carefully choose such specimens as are of a firm dense texture, and they never scrape the same rock oftener than once in five years. It is prepared for use with volatile alkali and alum, but the exact process is kept a secret by the manufacturers at Glasgow. When sold to the Dyers, it appears in the form of a purple powder, called *Cudbear* (a corruption of Cuthbert, the name of its inventor). This powder being boiled with woollen yarn, communicates its colour to it, but not to vegetable substances. The colour is far from permanent. See Dr. Smith's *Tour on the Continent*, vol. 1. p. 198.



GERANIUM rotundifolium.

*Doves-foot Cranebill.**MONADELPHIA Decandria.*

GEN. CHAR. *Style* one. *Cor.* of 5 petals, regular. *Nectary* 5 glands at the base of the longer stamina. *Fruit* beaked, separating into 5 arilli, each tipped with a long simple naked awn.

SPEC. CHAR. Stalks two-flowered. Petals entire, the length of the calyx. Stem spreading. Leaves kidney shaped, cut. Arillus even, hairy. Seeds reticulated.

SYN. *Geranium rotundifolium.* *Linn. Sp. Pl.* 957.

Huds. Fl. An. 303. *With. Bot. Arr.* 732.

G. columbinum majus, flore minore cæruleo.

Raii Syn. 358.

FROM under a wall near Hackney, gathered by Mr. E. Forster jun. who has also found it about Islington, and at Church Bramton in Northamptonshire. This is one of the least general of our Cranebills, though abundant in quantity where it does grow.

This species is annual, and flowers in June and July. The stems are much branched, straggling, but scarcely prostrate. Every part of the herb is clothed with a velvet-like downiness, very soft to the touch. The leaves are more round than in some other common species; their colour paler. It is, however, needless to recur to the vague marks of distinction given by all authors, as the punctated or reticulated seeds distinguish this from all its allied species, especially from the pusillum, with which its arillus somewhat agrees; though even in that part they may be distinguished, the hairs on the arillus of pusillum being *close pressed*, not spreading. The arillus of molle differs from both in being very rugged, and not even, in its surface. That of pyrenaicum is even, sharply carinated, and scarcely pubescent at all.



P Y R O L A minor.

*Lesser Winter-green.**DECANDRIA Monogynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Capsule* 5-celled, bursting at the angles.

SPEC. CHAR. Flowers in a racemus, scattered. Stamina spreading every way. Style straight.

SYN. *Pyrola minor.* *Linn. Sp. Pl.* 567. *Huds. Fl. An.* 176. *Witb. Bot. Arr.* 429. *Raii Syn.* 363.

SENT from Scotland along with *Pyrola uniflora* (t. 146) by James Brodie Esq. It is rather an alpine plant, occurring in mountainous forests, though even found in Stoken-church woods Oxfordshire. Dillenius well observes, that this is really more common than the *P. rotundifolia*, called by old authors *vulgaris*, and suspects they may often have been confounded, as they certainly were by Ray. Dr. Smith found them so in Mr. Lightfoot's herbarium, though so distinct in the form and position of their stamina and pistilla, as we hope to demonstrate when we can obtain a wild specimen of *P. rotundifolia*.

The plant now figured has a perennial branchy root, producing a few short, angular, leafy stems. The leaves are roundish, obtuse, obsolete ferrated, of a hard firm texture, smooth, on longish, angular, and often webbed, footstalks. The stalk is erect, about 6 inches high, triangular, smooth, terminating in a simple upright bunch of white or reddish flowers, standing on short footstalks, and pointing every way. The bractæ lanceolate, standing solitary at the base of each footstalk. Calyx small. Petals concave, veiny. Stamina spreading from their base, then erect. Antheræ roundish, with two holes at their lower part, but not, as in *P. uniflora*, protruded into tubes. Germen roundish, with five furrows. Style simple, short, erect, nearly on a level with the stamina. Stigma small, five-lobed.

This species, planted by Mr. Lightfoot, is in a manner naturalized in the Duke of Portland's fine wood at Bulstrode.



N Y M P H Æ A lutea.

Yellow Water-Lily.

POLYANDRIA Monogynia.

GEN. CHAR. *Cal.* of 4 or 5 leaves. *Petals* numerous.
Berry of many cells, truncated.

SPEC. CHAR. Leaves heart-shaped, entire. Calyx five-leaved, much exceeding the corolla.

SYN. *Nymphæa lutea.* *Linn. Sp. Pl.* 729. *Huds. Fl. An.* 234. *With. Bot. Arr.* 554. *Relb. Cant.* 205. *Raii Syn.* 368.

A VERY general inhabitant of rivers and large pools, flowering about the middle of summer very copiously. Root perennial, running deep into the mud. Leaves radical, on roundish footstalks flattened on one side, which are longer or shorter according to the depth of the water, the leaf itself floating upon the surface, to which its under side is closely applied, while the upper remains dry. A remarkable line or furrow runs from the insertion of the footstalk to the tip of the leaf; the margin is entire. The flowers, as Ray observes, smell like brandy, whence they are vulgarly called in Norfolk *brandy-bottles*. The calyx is of five large obovate concave yellow leaves, green externally towards the base. Petals much shorter, numerous, recurved, very obtuse, thick and fleshy, yellow with an orange spot. Stamina and antheræ recurved, mostly uniform. Germen round and smooth. Style scarcely any. Stigma flattish, umbilicated, radiated, each ray answering to a cell in the berry; which is spongy, full of farinaceous seeds, not unlike those of Millet, but larger. All the stamina, as well as the petals, are inserted into the receptacle, not into the germen.



N Y M P H Œ A alba.

*White Water-Lily.*P O L Y A N D R I A *Monogynia.*

GEN. CHAR. *Cal.* of 4 or 5 leaves. *Petals* numerous.
Berry of many cells, truncated.

SPEC. CHAR. Leaves heart-shaped, entire. Calyx four-leaved.

SYN. *Nymphæa alba.* Linn. *Sp. Pl.* 729. *Huds. Fl. An.* 234. *Willd. Bot. Arr.* 555. *Rehb. Cant.* 206. *Raii Syn.* 368.

INDIA may boast her Palm-trees, and America her Magnolias, but the latter scarcely exceed our *Nymphæa* in magnificence, and the most noble and celebrated of all Indian productions is in fact a Water-lily, *Nymphæa Nelumbo*. That, however, does not more excell the other vegetables of its country, than this every British plant besides. It has altogether the air of a Tropical production.

Though by far less common than the *lutea*, this kind is not rare in some parts of England. It flowers at the same time with that species, and agrees with it very much in root and leaves, except in being larger. The flower indeed is widely different. The calyx of four leaves only, which are lanceolate, and more spreading, white, often tinged at the base with a light blush-colour. Petals nearly as large, lanceolate, in several rows, gradually lessening and running into the stamina, so that the line of distinction can hardly be drawn between them, the filaments of the outer rows of stamina being dilated into a lanceolate form, and having but the rudiments of antheræ. Both petals and stamina are inserted upon the germen in circles even to its summit. The stigma is very different from that of *N. lutea*, being deeply cloven, and its segments recurved. These flowers have no smell, and when gathered they fade very soon. They easily preserve their form and colour in drying between paper, though so very succulent. The stalks are full of large tubes, in which are numerous white hairs.



THE [illegible] OF [illegible]

BY [illegible]

AND [illegible]

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CARDUUS acaulis.

*Dwarf Thistle.*SYNGENESIA *Polygamia-aqualis.*

GEN. CHAR. *Cal.* ovate, imbricated with spinous scales.
Receptacle hairy.

SPEC. CHAR. Stem wanting. Calyx smooth.

SYN. *Carduus acaulis.* *Linn. Sp. Pl.* 1156. *Hudf. Fl. An.* 354. *With. Bot. Arr.* 877. *Relb. Cant.* 307.

Carlina acaulis minore purpureo flore. *Raii Syn.* 195.

THIS species of *Carduus* occurs in gravelly and chalky pastures and commons, very abundantly in Norfolk, though by no means a general English plant. Its large red flowers, which are seldom more than one upon each plant, are very conspicuous, standing close to the root in the centre of many wide-spreading depressed leaves, which sometimes form a circle of near a foot in diameter, and are so closely applied to the ground that nothing can grow beneath them. These leaves are smooth and shining, of a deep green, pinnatifid, much lobed, and very spinous. Scales of the calyx narrow, smooth, rather obtuse, slightly spinous, sometimes minutely ciliated towards the top. Flower erect, deep crimson, appearing in July or August. The root is strong, woody, and perennial.

When cultivated in a garden the habit of the plant grows more lax, and a stem is produced, some inches in height, and branched, bearing several flowers. The same thing happens to the *Carlina acaulis* of the south of Europe.



J. G. Sowerby del. 1861

HYMENOPHYLLUM Tunbridgensse.
Tunbridge Filmy-leaf.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* inserted into the margin of the frond, distinct. *Involucrum* two-valved, flatish, straight, opening outwards, longer than the *Column*. *Smith Mem. of the Turin Acad. Vol. 5.*

SPEC. CHAR. Fronds alternately bipinnate, decurrent, sharply ferrated as well as the involucrum. *Fructifications* solitary at the upper edge of the base of each general division of the frond.

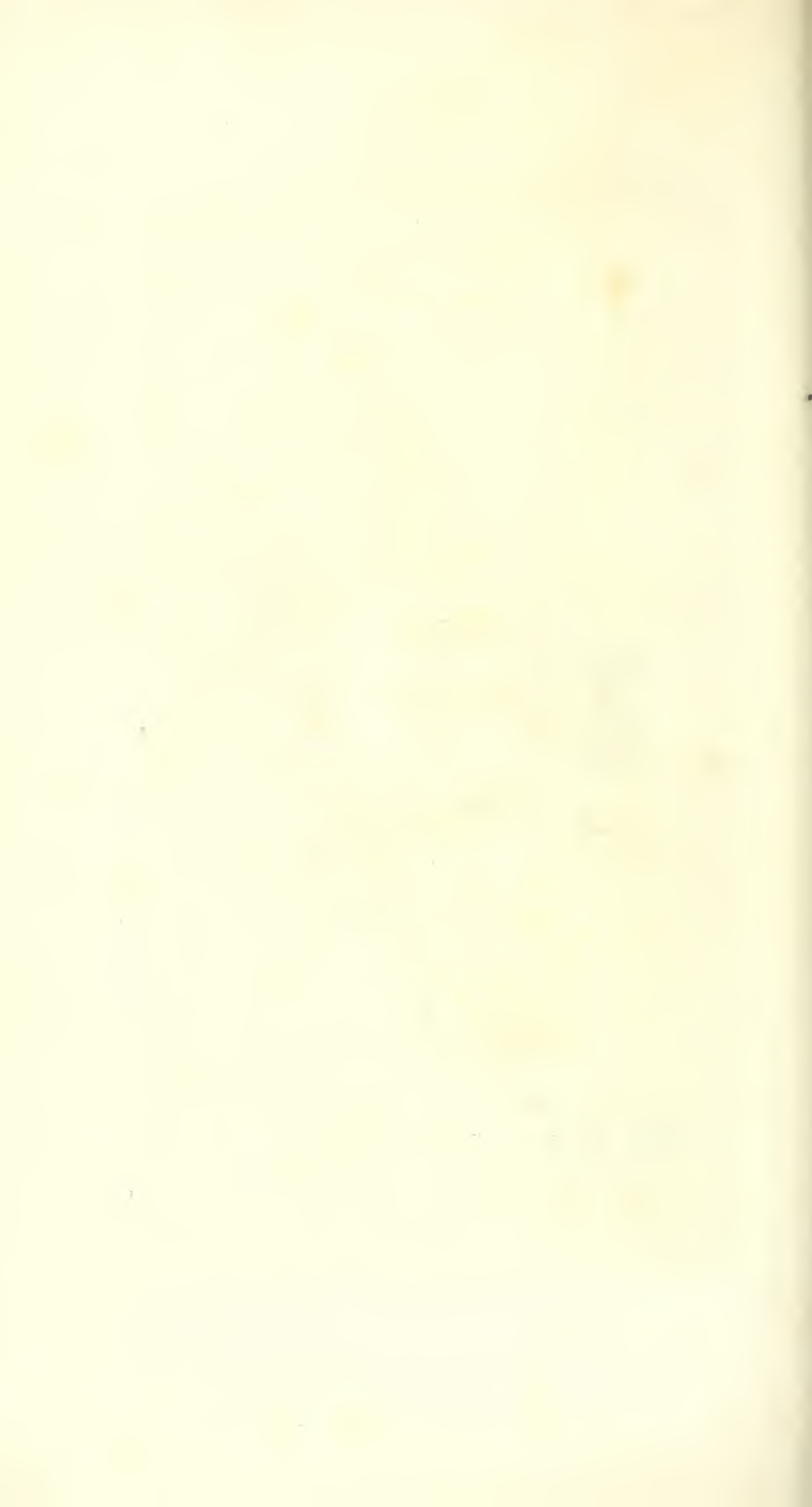
SYN. *Trichomanes Tunbridgensse. Linn. Sp. Pl. 1561. Hudf. Fl. An. 461. With. Bot. Arr. Vol. 3. 65. Adiantum petraeum perpusillum Anglicum, foliis bifidis vel trifidis. Raii Syn. 123.*

GATHERED near Tunbridge by Mr. T. F. Forster jun. It grows also in Wales, Westmorland, and the north parts of Yorkshire, on horizontal moist rocks, which it clothes in large tufts. Mr. Lightfoot mentions this species as common in Scotland. The slender wiry roots spread very far, throwing out fibres here and there, and producing numerous upright leaves or fronds, which when sometimes dried up in summer curl backwards. Their substance is extremely membranous and pellucid, appearing finely reticulated under a microscope, as in all this genus (and in the real *Trichomanes*), their segments linear, obtuse, sharply ferrated, and having a strong simple central rib. The *fructifications*, when they occur, take place of the first segment of each *pinna* or general division of the frond, each terminating its appropriate nerve, and pointing upwards. Their involucrum is of two slightly concave valves, arising from the substance of the leaf, irregularly notched and ferrated in their margin. Between these is a short column, beset with small round bivalve capsules, each embraced with an elastic ring as in the more common ferns.

The bivalve involucrum and short column, so distinct from the urn-shaped undivided involucrum, and long column or style, of the true *Trichomanes*, have induced Dr. Smith to establish this new genus in his Dissertation on Ferns, printed by the Academy of Turin. We have attempted to give it an English name, which is a translation of its Greek one.



Palm. rhodol. Felti 1790



CYATHEA incisa.

Lacinated Cup-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fruifications* scattered, roundish, growing out of an hemispherical calyx, which bursts at the top without an operculum. *Smith Mem. of the Turin Acad. Vol. 5.*

SPEC. CHAR. Frond lanceolate, bipinnate, pinnatifid; its segments lobed, obtuse, and beardless. Stalk slightly winged. Calyx lacerated, and turned to one side.

WE received this fern from a wall near Walthamstow, where it was found by Mr. T. F. Forster jun. who thinks it distinct from *Cyathea fragilis* (*Polypodium fragile* of Linnæus). We dare not positively assert it to be so, but rather offer it for the consideration of botanists conversant with this intricate tribe. The chief difference consists in the divisions of the leaves of our fern being obtuse, and perfectly destitute of the bristly point observable in the other. There is also some difference in their habit and appearance, and the fructification of the *fragilis* is blacker. We have been inclined to believe ours the *P. regium* of Linnæus; but the original specimen of that in the Clifortian herbarium has a triangular, not lanceolate, frond. Neither is ours *P. alpinum* of Jacquin, the divisions of which are linear, or nearly so.

With respect to the generic character, we hope to give a more clear idea of it in figuring *C. fragilis*, as in this the parts are too minute, and the structure too obscure; but it is essential to the genus that the young capules are enveloped in a globular membrane, which goes underneath them, and bursts either at the top, in an even or lacerated manner, or at the side (fig. 1.) as in this species and some others.

In some specimens the fronds are broader and more dilated than those we have drawn.



CUCUBALUS Behen.

*Bladder Campion.**DECANDRIA Trigynia.*

GEN. CHAR. *Cal.* swelling. *Petals* five, furnished with claws, not crowned at the mouth. *Caps.* three-celled.

SPEC. CHAR. Calyx nearly globular, smooth, reticulated with veins. Leaves ovato-lanceolate, glaucous, smooth.

SYN. Cucubalus Behen. *Linn. Sp. Pl.* 591. *Huds. Fl. An.* 186. *With. Bot. Arr.* 445. *Relb. Cant.* 168. *Lychnis sylvestris*, quæ Ben album vulgo. *Raii Syn.* 337.

FOUND every where in corn-fields, pastures, and by way-sides, flowering abundantly in the middle and latter part of summer, and thriving though frequently covered with dust. It appears to most advantage in a chalky soil.

Root perennial. Radical leaves in tufts, spatulate; those on the stem lanceolate or ovate; all of them entire, pliable and somewhat succulent, glaucous, with a very green pulp, mostly smooth, though sometimes ciliated and a little hairy. The stem is round, smooth and glaucous, a foot or two in height, erect, leafy, dichotomously paniced. The flowers on slender foot-stalks, nodding, numerous, with scarcely any smell. Calyx inflated, and beautifully veined with purple and green. Petals white, quite destitute of a crown. The antheræ are sometimes liable to a disease, becoming large and swelled, and producing a vast quantity of barren purple dust, instead of the true pollen, with which the petals are often stained so as to be discoverable at a great distance. Dr. Withering says the leaves boiled may be eaten as peas.

Whether the *Silene amœna* of our British authors (widely different from that of Linnæus) be only a variety of this plant, as the last-mentioned writer thought, or really a distinct species and genus, we shall at some future time endeavour to determine.



1767 by det. Marchi, 1794.

A TRIPLEX laciniata.

Frosted Sea Orache.

POLYGAMIA Monoecia.

GEN. CHAR. Hermaphrodite. *Cal.* 5-leaved. *Cor.* none.*Stam.* 5. *Style* cloven. *Seed* 1, depressed.Female. *Cal.* 2-leaved. *Cor.* none. *Style* cloven.*Seed* 1, compressed.

SPEC. CHAR. Stem herbaceous, spreading. Leaves trowel-shaped, angular and dentated, very mealy beneath.

SYN. *Atriplex laciniata*. *Linn. Sp. Pl.* 1494. *Huds. Fl.**An.* 442. *With. Bot. Arr.* 1143. *Lightf. Flo. Scot.*636. *Dicks. Hort. succ. fasc.* 4. n. 15.*A. maritima*. *Raii Syn.* 152.

GATHERED last August on the beach near Landguard-fort by Dr. Smith, who also found it plentifully at Leith near Edinburgh. This is the real *Atriplex laciniata* of Linnæus, though the description in *Sp. Pl. ed. 2*, does not altogether accord with our British specimens, owing to that description having been made from the consideration of several specimens in the Linnæan herbarium which to us appear distinct species. Mr. Lightfoot's and Mr. Woodward's descriptions are good; but we cannot agree with Mr. Hudson in referring any of the varieties of our plant to the *A. tatarica*, though possibly some of the above-mentioned specimens, described by Linnæus for *laciniata*, may belong to *tatarica*.

Our *laciniata* is a very distinct and easily discriminated species. Its stem is round, always spreading, generally prostrate, much branching, and more or less zigzag, by no means wand-like (*virgatus*), its colour white or reddish. Leaves mostly alternate, more or less triangular, but lengthened out at the base, deeply and unequally toothed and sinuated, though not properly laciniated, clothed (especially beneath) with white silvery scales, which likewise appear on other parts of the plant. Even the hermaphrodite flowers are scarcely spiked, and the female ones are axillary. The seed of the former we have not found in perfection. The calyx of the latter grows very large, and is generally furnished with lateral protuberances; it encloses a large compressed smooth seed. The root is annual, and thrives in the pure sand of the sea-shore



SAGINA ceraftoides.

*Mouse-ear Pearl-wort.**TETRANDRIA Tetragynia.*

GEN. CHAR. *Cal.* 4-leaved. *Petals* 4. *Caps.* with 4 cells and 4 valves.

SPEC. CHAR. Stem diffuse and dichotomous. Leaves spatulate or obovate, recurved. Foot-stalks of the ripe fruit reflexed.

SYN. *Sagina ceraftoides.* *Transf. of Linn. Soc. Vol. 2.*
343.

MR. James Dickson, who discovered this plant on the sandy shores and rocks about the Firth of Forth in Scotland, flowering in June and July, laid it before the Linnæan Society in October last; and from his specimens, both wild and cultivated, Dr. Smith has drawn up a full description, printed in the 2d volume of the Society's Transactions, just about to appear.

The habit of this plant is very like that of a *Cerastium*, but the number of the parts of fructification make it a *Sagina*, to which genus it therefore must be referred, as the genera in this natural order are founded on differences of number alone. Mr. Dickson has observed the number of stamina to be constantly four in the wild plant: truth obliges us to declare we have in cultivated very luxuriant specimens sometimes found five, though in the same flower the petals, calyx-leaves and styles were but four; a sufficient indication that the fifth stamen was an unnatural luxuriance.

The root appears to be annual. Stems prostrate, dichotomous, hairy in the upper part. Leaves like those of a *Cerastium*, hairy. Flowers solitary, on longish foot-stalks from each division of the stem, which foot-stalks, as the fruit ripens, become reflexed. Calyx of four leaves, two of which have a membranous margin. Petals shorter than the calyx, cloven, white. Stamina still shorter. Germen oval. Styles short. Capsule bursting with 8 blunt teeth. The flowers expand only in bright weather.



P. parryi del.

SAXIFRAGA stellaris.

*Hairy Saxifrage.**DECANDRIA Digynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with two beaks, one-celled; *seeds* numerous.

SPEC. CHAR. Leaves ferrated. Stem naked, branching. Petals pointed.

SYN. *Saxifraga stellaris.* *Linn. Sp. Pl.* 572. *Huds. Fl. An.* 179. *With. Bot. Arr.* 430.

Geum palustre minus, foliis oblongis crenatis.
Raii Syn. 354.

THE elegant genus of *Saxifraga* is almost entirely alpine, and most of its species can bear a considerable degree of cold, provided they enjoy a pure air. This now before us grows plentifully in Wales, Scotland, and the northern parts of England, especially Westmoreland. Dr. Woodville favoured us with fresh wild specimens gathered last summer on Skiddaw. Its favourite station is in the black turfy margins of rills on the north sides of mountains, near their summits, where it flowers in June or July.

The roots are perennial, long and fibrous, crowned with flat stellated tufts of obovate leaves, which are hairy above, paler and smooth, sometimes purple, beneath, pointed and grossly ferrated. Stalks from two to six inches high, erect, round, clothed with scattered divaricating hairs, and subdivided at the top into a sort of corymbus of from 3 to 7 or 9 flowers, each on a partial foot-stalk, at whose base is a bractea, either palmated or entire. Calyx reflexed. Petals spreading, ovate, white with 2 yellow spots near the base. Stamina all nearly equal. Antheræ and germen purple. Capsule green, with a purple ring near the base. In this species and some others the germen is completely superior; but there are others again where it is partly, if not altogether, below the flower; so that this circumstance of the situation of the germen, so important in most orders of plants, is in this genus of no consequence.



POTAMOGETON perfoliatum.

Perfoliate Pond-weed.

TETRANDRIA Tetragynia.

GEN. CHAR. *Cal.* none. *Petals* 4. *Style* none. *Seeds* 4.

SPEC. CHAR. Leaves heart-shaped, embracing the stem.

SYN. Potamogeton perfoliatum. *Linn. Sp. Pl.* 182.*Hudf. Fl. An.* 74. *Witb. Bot. Arr.* 172. *Relb. Cant.*70. *Raii Syn.* 149.

VERY common in ponds and rivers in every part of England; nor is it, as far as we have observed, at all peculiar to a clay soil, as Linnæus seems to hint.

Every part of the plant, except the flower-stalks, is completely immersed in the water, so that it is only to be discovered by the spikes of flowers about July and August standing a little above the surface, and abounding in whitish pollen. It should seem the respiration of such truly aquatic vegetables must be as different from the respiration of those which inhale atmospheric air, as the breathing of fishes is from that of beasts and birds. Accordingly we find their leaves of an extremely different texture, pellucid like oiled paper (as Haller remarks), very vascular, harsh and ribbed, but often extremely brittle. The surface of such plants, like that of aquatic animals, is destitute of hair or down of any kind.

The stalks of this Pond-weed are very long, round, with leaves crowded about the top and branches. These leaves might rather be called ovate than heart-shaped, at least in the most common appearance of the plant. The petals are of a dull purple, and so situated that the air easily passes between them to waft the pollen to the stigma. The seeds are compressed, and shining.



J. Sowerby del^t Apr⁶, 1794

LATHYRUS palustris.

Marsh Everlasting-Pea.

DIADELPHIA Decandria.

GEN. CHAR. *Style* flattened, downy above, broader upwards. Two upper segments of the *calyx* shortest.

SPEC. CHAR. Several flowers on a stalk. Several leaflets on each tendril. *Stipulæ* lanceolate.

SYN. *Lathyrus palustris.* *Linn. Sp. Pl.* 1034. *Huds. Fl. An.* 317. *With. Bot. Arr.* 773. *Relb. Cant.* 273.

L. viciæformis, seu *Vicia Lathyroides nostras.*
Raii Syn. 320.

THIS occurs in moist woods and pastures in several parts of England, but not commonly. Our specimen was sent from Burgh, near Yarmouth, by Dawson Turner, Esq. We have compared it, as well as some of Mr. Humphrey's original specimens gathered at Ranaugh (*see Huds.*) with those of Linnæus, and find them to agree exactly, except in the number of flowers, the Swedish ones having, as Professor Retzius describes them, no more than three on each footstalk. Yet the very indifferent figure in Flo. Dan. (t. 399.) represents as many as thirteen, and those rather red than blue; so that one would think it could hardly be the same species, yet we know of no other like it.

Lathyrus palustris grows 3 or 4 feet high if supported by bushes; the stem but little branched, considerably winged. Leaflets 4 or 6, opposite, or rarely alternate, lanceolate, acute, glaucous beneath. Tendrils 2 or 3-cleft. *Stipulæ* lanceolate, but varying in breadth, their lower lobe a little falcated. Flowers of a vivid purplish blue of great beauty, in erect bunches. Pods longish and smooth, as is every part of the herbage. It thrives in a garden in good soil, even if not wet, and is very ornamental, flowering in the middle of summer, and continuing some time. The roots are perennial.



S E D U M rupestre.

*Rock Stonecrop.**DECANDRIA Pentagynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5, with five nectariferous scales at the base of the germen. *Cap-sules* 5.

SPEC. CHAR. Leaves thick, subulate, clustered together in a five-fold order, and loose at the base. Flowers in a cyme.

SYN. *Sedum rupestre.* *Linn. Sp. Pl.* 618. *Huds. Fl. An.* 195. *With. Bot. Arr.* 466.

S. minus a rupe S. Vincentii. Raii Syn. 270.

ORIGINALLY observed on St. Vincent's rocks, near Bristol hot-wells, and afterwards on Chedder rocks by Dillenius, and on a hill in Wales. Mr. Robson found it on walls about Darlington, from whence he sent us this wild specimen, flowering in July 1792.

The roots are perennial, branched, and throw out many long decumbent stems, which are round, red and naked in their lower part, taking root in many places; above they are alternately branched, terminating in thick club-shaped tufts of leaves, closely imbricated. The flowering stems are more upright, a foot high, clothed with more scattered leaves, and terminated by a large handsome cyme of yellow flowers. The calyx is very glaucous, often tipped with red. Flowers often in 6 or 7 parts instead of 5. All the leaves are glaucous, thick and succulent, subulate, unconnected with the stem at their base, which is like a little blunt spur; they are more compressed, and much more closely imbricated than in *S. reflexum*, neither are they ever recurved as in that species.

Dillenius first well ascertained this plant in his *Hortus Elthamensis*, where he has given a good figure of it, *tab.* 256, *f.* 333.

Flora Danica, *tab.* 59, is a very different plant, the *Sedum saxatile* of Wiggers, *Flor. Holsat.* 35.



P. Sowerby del. Apr. 1, 1794.

S E D U M anglicum.

English Stone-crop.

D E C A N D R I A Pentagynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5, with 5 nectariferous scales at the base of the germen. *Capsules* 5.

SPEC. CHAR. Leaves thick, ovate, gibbous and loose at the base, alternate. Cyme of two branches.

SYN. *Sedum anglicum.* *Huds. Fl. An.* 196. *With. Bot. Arr.* 468.

S. rubens. *Lightf. Fl. Sc.* 235.

S. minimum non acre, flore albo. *Raii Syn.* 270, *t.* 12. *f.* 2.

COMMUNICATED by Dawson Turner, Esq. from the sandy downs near Yarmouth, where it is very abundant, as well as on the mountains of the north. Dr. Smith gathered it in Westmoreland, and on the rock of Dumbarton-castle in Scotland.

The root is generally supposed to be annual, throwing out many stems, branched and decumbent at their base, then upright and more simple, round, reddish, clothed with alternate rather thick-set leaves, and terminated by small bifid or trifid cymes of flowers. The leaves are very thick and succulent, oval, glaucous, with a blunt protuberance at their base, below their attachment to the stem. The flowers are at first thickly clustered together; but as the cyme expands, they appear more remote, one always standing at the first divarication of the cyme. The calyx resembles the leaves, and is obtuse. The petals have a reddish rib, and are often spotted with the same colour at their tip. The capsules are membranous and smooth.

This species has cost us no small trouble to determine accurately. Of the plants which approach it, *Sedum annuum* of Linnæus has a yellow flower, and much shorter and broader leaves. *S. atratum* has leaves like *S. annuum*, and very blunt purple capsules, with red and white petals. *Crassula rubens* has a sharper calyx than our plant, and rough, spreading, strong (not membranous) capsules. Mr. Hudson and Mr. Lightfoot were therefore right in making this a species distinct from all those of Linnæus.



Isomeris acaulis Apl. 1794.

COMARUM palustre.

Marsh Cinquefoil.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* in 10 segments. *Petals* 5, less than the calyx. *Receptacle* of the seeds ovate, spongy, permanent.

SPEC. CHAR.

SYN. *Comarum palustre.* *Linn. Sp. Pl.* 718. *Huds. Fl. An.* 227. *With. Bot. Arr.* 540. *Relb. Cant.* 200.

Pentaphylloides palustre rubrum. *Raii Syn.* 256.

NOT unfrequent in muddy bogs and ditches, especially in the north, and in Norfolk, flowering in June and July. It is among our more handsome native plants, and may be introduced with advantage among American shrubs, in a border of bog earth.

The roots are perennial, long and creeping, and, like the stem, round, and of a reddish brown. The leaves are generally, but not always smooth: leaflets mostly five, rarely seven, in the top leaf three, more or less obtuse, strongly serrated, glaucous beneath, with a pair of stipulæ (mostly entire) running up the common leaf-stalk. Flowers on partial footstalks, produced in an irregular, somewhat dichotomous manner. Their colour and structure our figure expresses. The calyx leaves are lobed or entire. Every part of the flower is permanent, enfolding the fruit, which consists of numerous oval compressed seeds, covering a conical spongy receptacle, which does not fall off when the seeds are ripe. In this last circumstance only the genus differs from *Fragaria*. Haller thought the difference too slight, and therefore joins these two genera, along with *Potentilla*, into one. But Linnæus well observes, in *Flora Lapponica* (*sec.* 209), that the genera of this natural order are all very nearly allied (the order being *so* natural), and that we must either keep them as he has defined them, or unite the above with *Rubus*, *Rosa*, *Geum*, *Dryas*, &c. into one, which would be very paradoxical.



J. Sowerby del. Apr. 1794

LICHEN rangiferinus.

Rein-deer Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, tubular, very much branched, and hoary; the little branches divaricated and nodding.

SYN. Lichen rangiferinus. *Linn. Sp. Pl.* 1620. *Huds. Fl. An.* 557. *With. Bot. Arr. V.* 3. 216. *Relb. Cant.* 438.

Lichenoides tubulosum ramosissimum, fruticuli specie, candicans. *Raii Syn.* 66.

Coralloides montanum fruticuli specie ubique candicans, *Dill. Musc.* 107. t. 16. f. 29.—& C. frutic. specie candicans, corniculis rufescentibus, *ibid.* 110. t. 16. f. 30.

THIS moss, the chief clothing of the northern alpine tracts of Lapland, is found every where on our heaths, but in a less luxuriant state than farther north. The numerous herds of rein-deer, in which consists the only riches of the simple sequestered Laplander, are entirely dependent on it for their winter food. It there grows at least a foot high, covering the ground like snow. With us it seldom attains the height of 6 inches, and is generally much less.

The species is easily known by its branched and tufted figure. Its surface is hoary, or rough with minute warts. It is tubular within, and the stem thin and brittle when very dry or very wet. Dillenius justly says, it is not perforated at the divarications. Hagen (quoted by Mr. Relhan) mentions the contrary. The variety β of Hudson, called *sylvaticus* (fig. 30 of Dillenius), is a trifling one, having reddish or brownish tips, which colour sometimes occurs in other parts of the plant. The fructification is not common. It consists of brown tubercles.



LICHEN uncialis.

Short perforated Lichen

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, tubular, perforated; the little branches very short and pointed.

SYN. Lichen uncialis. *Linn. Sp. Pl.* 1621. *Huds. Fl. An.* 555. *With. Bot. Arr. V.* 3, 218. *Relb. Cant.* 439.

Lichenoides tubulosum, cauliculis mollioribus & crassioribus, majus & minus. *Raii Syn.* 67.

Coralloides perforatum majus, molle & crassum. *Dill. Musc.* 98. *t.* 16. *f.* 21—& minus, molle & tenue. *Ibid.* 99, *f.* 22.

LICHEN uncialis is found on heaths nearly as common as rangiferinus, from which it differs in being much less branched, and not tufted; the branches are shorter and awl-shaped, the terminal ones brown, and forming a sort of radiated crown, of sometimes 6 or 8 points. The perforations at the divarications of the stem are very wide, and seldom wanting; whereas in rangiferinus they are scarcely (if at all) to be found. The fructifications are very minute tubercles at the tips of the little brown terminal branches.

This plant varies in height from 1 to 2 inches, as well as in thickness; hence the different species and varieties of authors. Sometimes it has a few scaly leaves on the stem, and is much branched, see Mr. Hudson's variety γ —perhaps the last may be a distinct species.



PLANTAGO maritima.

Sea Plantain.

TETRANDRIA Monogynia.

GEN. CHAR. *Cal.* 4-cleft. *Cor.* 4-cleft; its limb reflexed. *Stamina* very long. *Capf.* with two cells, bursting all round.

SPEC. CHAR. Leaves linear, mostly entire, channelled, woolly at the base. Spike cylindrical. Stalk round.

SYN. *Plantago maritima.* *Linn. Sp. Pl.* 165. *Huds. Fl. An.* 64. *With. Bot. Arr.* 144. *Relb. Cant. Suppl.* 2. 9.

P. marina. *Raii Syn.* 315.

NO plant varies more in size than this. Its leaves are sometimes scarcely an inch, at other times more than a foot in length. The height of the stalk is more constant, but the number of flowers in the spike varies beyond computation. Ours is a moderately luxuriant specimen. It loves a muddy soil, and flowers late in the summer. The root is perennial. It is as various in its place of growth as in size, being found on the highest of our mountains as well as on the shore, like *Statice armeria*. Hence it has been taken for *P. alpina*, which last is a very different plant, with short oval spikes, and lanceolate flat leaves, and has never (we believe) been found in Britain. Still less resemblance has our *Plantago*, though it has sometimes dentated leaves, to *P. Loeslingii*, that having flat leaves, and very short roundish pale spikes of flowers, much like those of *P. Pfyllium*, and having certainly never been met with in our island.

P. maritima may be known by its very fleshy and smooth leaves, channelled above and concave below, with a tuft of wool at their base, which indeed occurs in other species. The spike, however short, is always cylindrical.



I. Sennerby del. M. J. 1818.

L'AMERICA DEL NORD

1848

L'AMERICA DEL NORD

Il Congresso degli Stati Uniti, nel 1848, ha approvato una legge che stabilisce la libertà di commercio per tutti i cittadini degli Stati Uniti, e che ha anche stabilito la libertà di commercio per tutti i cittadini degli Stati Uniti, e che ha anche stabilito la libertà di commercio per tutti i cittadini degli Stati Uniti.

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LYSIMACHIA thyrsiflora.

Tufted Looseftrife.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* wheel-shaped. *Capsule* globose, pointed, with 10 valves.

SPEC. CHAR. Flowers in lateral pedunculated clusters.

SYN. *Lyfimachia thyrsiflora.* *Linn. Sp. Pl.* 209. *Huds. Fl. An.* 86. *With. Bot. Arr.* 209.

L. lutea, flore globofo. *Raii Syn.* 283.

DESPAIRING of procuring recent wild specimens of this very rare plant, we cannot refrain from exhibiting a figure of a cultivated one, which has been compared with wild ones, and found in no respect to differ. It grows in boggy places, about running streams, and was found in Ray's time in the east riding of Yorkshire, as well as about King's Langley in Hertfordshire. Dr. Smith saw, in the year 1781, specimens gathered by Dr. White in a bog near Severus's hills at York; but the plant was then lost, from the place having been drained, so that we really do not know a certain station of this *Lyfimachia* at present.

It has a long root with whorls of fibres like many aquatic plants. The stem 10 or 20 inches high, erect, round, perfectly simple, slightly woolly, covered with opposite, lanceolate, entire leaves, which are pale beneath, and somewhat revolute. The bunches of flowers stand opposite, one from the bosom of each leaf about the middle of the stem, erect, pubescent, each of about ten flowers, on partial footstalks, accompanied by solitary lanceolate bractææ. The corolla is very deeply cloven into lanceolate segments, with a small tooth between every two of them. The stamina are capillary, longer than the corolla, and opposite to its segments. Style simple. The calyx, germen, and tips of the corolla are prettily spotted with red. It flowers about midsummer, and may be easily known from all other British vegetables.



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CARDUUS pratensis.

*Meadow Thistle.*SYNGENESIA *Polygamia-æqualis.*

GEN. CHAR. *Cal.* ovate, imbricated with spinous scales. *Receptacle* hairy.

SPEC. CHAR. Leaves sessile, half embracing the stem, lanceolate, slightly dentated, ciliated with small unequal spines. Stem mostly single-flowered.

SYN. *Carduus pratensis.* *Jacq. Flo. Austr. vol. i. t. 42.*
Hudf. Fl. An. 353. With. Bot. Arr. 877.

C. dissectus. *Hudf. Fl. An. ed. 1. 307.*

C. heterophyllus. *Relb. Cant. 306.*

THIS thistle, though found in meadows in various parts of England, has never been well understood. It appears not to be described by Linnæus, nor is it in his Herbarium. The only species of his that it can possibly be is the *dissectus*, a plant he took up from books, without having it in his Herbarium, and which therefore we cannot certainly ascertain. Neither dare we positively say with Dr. Stokes, that this is *C. heterophyllus* of Lightfoot, though we suppose it may be so. Our specimen was gathered near Bromley in Kent, flowering in June.

The root is perennial, creeping, with long fibres. Stem erect, 1 or 2 feet high, mostly simple, and terminated with one (rarely more) erect flower, its surface striated and cottony. Leaves several at the lower part of the stem, lanceolate, some slightly waved and dentated, others entire, all ciliated with unequal small spines, and green above, cottony (not very white) beneath. The upper leaves half embrace the stem, and become gradually smaller and more distant. A very small one generally stands near the flower. Scales of the calyx not very sharp, purplish, clothed with a web. Corolla, style and stamina nearly of an uniform purple.

We beg leave to recommend *C. helenioides* and *heterophyllus* to the examination of British botanists, as the specimens in the Linnæan Herbarium appear really distinct species.



A R A B I S Turrita.

*Tower Wall-Cress.**TETRADYNAMIA Siliquosa.*

GEN. CHAR. *Nectariferous glands* four, each reflexed like a scale between the calyx leaves.

SPEC. CHAR. Leaves embracing the stem. Pods bent backwards, flat and linear, with an incrassated margin.

SYN. *Arabis Turrita*. *Linn. Sp. Pl.* 930. *Huds. Fl. An.* 293. *Willd. Bot. Arr.* 703. *Relb. Cant.* 255.

FOUND hitherto only on the walls of Trinity and St. John's College, Cambridge, where it was first observed by the late Professor Martyn, and from whence the Rev. Mr. Sutton favoured us with specimens.

We do not pretend to answer for the generic character of this plant, which but ill accords with that of *Arabis*, to which genus it seems to have been referred chiefly from its habit. The glands are in fact 2 within the shorter stamina, and 2 without the longer, "as in *Brassica*" (*Martyn*). Much has been said and written about the insufficiency of these glands to discriminate the genera of this order; but as we have not yet found any fixed principles upon which to reform the whole tribe, we are obliged to take things as Linnæus has left them.

The root is woody, and biennial, according to Mr. Relhan. Stems full a foot high, simple, upright. Leaves pale green, dentated, roughish; the radical ones ovate, lengthened out at their base; those on the stem embracing it more than half round. Flowers pale sulphur-coloured, in a leafy spike. Pods very long, linear, flat, at first erect, then divaricated and pendent. Their edge is thicker than in *A. pendula*, which Haller says is the same species. We do not find the calyx at all rugose. The flowers appear in May.



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PYRUS Malus.

*Wild Apple, or Crab-tree.**ICOSANDRIA Pentagynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Apple* inferior, with 5 cells, and several seeds.

SPEC. CHAR. Leaves serrated. Flowers in a sessile umbel.

SYN. *Pyrus Malus.* *Linn. Sp. Pl.* 686. *Huds. Fl. An.* 216. *With. Bot. Arr.* 517. *Relb. Cant.* 191. *Malus sylvestris.* *Raii Syn.* 452.

THE common original of all our valuable varieties of apples grows wild in almost every natural grove or thicket, nor is it unfrequent in hedges. When about the end of May it is covered with bloom, few if any shrubs surpass the crab in beauty. Its elegant rose-colour bears a greater proportion to the white than in any cultivated variety, except the codling.

The tree is of a moderate size, distinguishable from our forest trees, when without leaves, by its very irregular branches, and particularly its short, knobby, and rugged bearing shoots, from which alone the leaves and flowers are produced. The leaves are roundish, or oval; their serratures disappear sometimes by cultivation, but not so completely as in the pear-tree. The flower-stalks form a simple terminal umbel, and are rarely subdivided. They are mostly covered with soft down, as is the inside (and sometimes the outside) of the calyx. Fruit small, hard, and very acid, yellowish green with a tinge of red.

The wood is hard, with a fine grain. The acid liquor of the fruit, called verjuice, is useful to cure sprains and scalds. See Dr. Withering's concise and full account of the uses of this and the pear-tree.



BRYUM rigidum.

Rigid Bryum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* with a lid. *Veil* smooth. *Flower-stalk* from a terminal tubercle.

SPEC. CHAR. Stem scarcely any. Capsules cylindrical, erect, bordered with twisted ciliæ. Veil longer than the capsule. Leaves spreading, lanceolate, involute, rigid.

SYN. *Bryum rigidum.* *Hudf. Fl. An.* 477. *Witb. Bot. Arr.* 105. *Smith's Tour on the Continent,* vol. i. 191.

B. acaulon, *Ericæ tenuifoliæ Gerardi folio.* *Dill. Musc.* 388. t. 49. f. 55.

Barbula rigida. *Hedwig. Musc. vol. i.* 65. t. 25.

DR. Smith, we believe, first found this moss, since the time of Dillenius, in November 1780, on a clay bank on the right-hand side of the Yarmouth road, two miles and an half from Norwich, where he also gathered the present specimen in January last. Mr. T. F. Forster has observed it in a chalk-pit on Banstead downs.

Its first appearance is very like the common *Bryum murale*, but the leaves of that have a strong mid-rib, which this wants, and are paler and thin at the margin, nor are they ever involute. By drying the points of the leaves are curved inwards. The stalks are longer, and the capsules larger than in *B. murale*. The veil very long, covering the whole young capsule, but soon falling off. Lid of the capsule red at the base. The fringe of the orifice consists of numerous hairs or teeth, which Hedwig found to be 32 in number. They are twisted into a cylinder.

How much soever we may admire the accuracy of observation, and physiological acuteness of the celebrated author last mentioned, we think the characters of his genera rather too minute and artificial. At least we beg leave to retain for the present those of Linnæus, though very imperfect, till repeated observations enable us to judge more correctly upon so abstruse a subject.



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ECHIUM vulgare.

*Common Viper's Buglofs.**PENTANDRIA Monogynia.*GEN. CHAR. *Cor.* irregular, its orifice open and naked.

SPEC. CHAR. Stem bristly and tuberculated. Stem leaves lanceolate, and rough with stiff hairs. Flowers in lateral spikes.

SYN. *Echium vulgare.* *Linn. Sp. Pl.* 200. *Huds. Fl. An.* 83. *With. Bot. Arr.* 200. *Relb. Cant.* 80. *Raii Syn.* 227.

A BEAUTIFUL and magnificent, though very vulgar weed, whose frequency in every high-way and field, especially in a light soil, makes us despise it as an unprofitable intruder; yet we have seen inhabitants of tropical countries, on their arrival in Europe, so charmed with the viper's buglofs, as to call it worthy to "decorate the gardens of the gods." The dry fields of Cambridgefhire and Norfolk are perfectly blue with these flowers in June and July, nor is any part of England without more or less of them.

The root is biennial. Stem strong, erect, round, mostly sprinkled with red tubercles bearing some of the very stiff bristles which clothe every part of the herb, and which on the upper side of the leaves arise from white callosities. The radical leaves are numerous, spreading in the form of a star. Spikes solitary from each axilla of the stem-leaves, pendulous, but growing erect as the flowers open. Buds red. Corolla nearly regular, purple, then bright blue, downy on the outside about the ribs. Stamina varying in length, but always somewhat longer than the corolla. The juices of the herb are very mucilaginous.

We can scarcely define the difference between this and *E. italicum* (for in this case the Linnæan characters unfortunately teach nothing), except that the stalk of the latter seems not to be tuberculated, and the flowers are not half so large as in *E. vulgare*.



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LEPIDIUM latifolium.

Broad-leaved Pepper-wort.

TETRADYNAMIA *Siliculosa.*

GEN. CHAR. *Pouch* notched, with many seeds : valves keeled, but not margined : partition contrary to the valves.

SPEC. CHAR. Leaves ovato-lanceolate, undivided, ferrated.

SYN. *Lepidium latifolium.* Linn. *Sp. Pl.* 899. *Huds. Fl. An.* 279. *With. Bot. Arr.* 671. *Raii Syn.* 304.

GATHERED wild at Heybridge, near Maldon in Essex, by Mr. Edward Forster, jun. in the place mentioned by Ray. It has been found in other parts of Essex, always in wet shady situations, and the late Mr. Humphrey discovered it below Sheringham cliffs in Norfolk. Otherwise it is by no means common.

Root perennial, long, branching, and spreading very far. Stems erect, alternately branched, leafy, round, smooth, panicled at the top with numerous branches of small whitish flowers in little corymbi, appearing in July. The leaves are alternate, acute, of a broad lanceolate figure, lengthened out at the base and the tip, ferrated in the middle, glaucous, especially beneath. Their taste is biting and disagreeable. An infusion is said by Dr. Withering to be emetic.



Journal of the
American Medical Association

The American Medical Association was organized in 1847, and has since that time been the leading organization of the medical profession in this country. It has a membership of over 40,000 physicians, and its journal, the Journal of the American Medical Association, is one of the most influential and authoritative medical publications in the world. The Association's primary purpose is to advance the science and art of medicine, and to promote the highest standards of medical practice. It accomplishes this through its various departments, including the Department of Education, the Department of Legislation, and the Department of International Relations. The Association also maintains a large library of medical books and journals, and it publishes a number of other important medical publications. The Journal of the American Medical Association is particularly noteworthy for its comprehensive coverage of medical news and its high standards of editorial quality. It is a must-read for all medical professionals, and it is also a valuable resource for the general public.

The Journal of the American Medical Association is published weekly, except during the summer months when it is published bi-weekly. Each issue contains a wealth of information on the latest medical research, clinical practice, and medical education. The journal is organized into several sections, including the following: Original Articles, Reviews, Reports, and Correspondence. The Original Articles section is the most prominent, and it contains the most important and original research findings in the field of medicine. The Reviews section provides critical evaluations of the latest medical literature, and the Reports section contains information on the activities of various medical organizations and societies. The Correspondence section is a forum for the exchange of ideas and opinions among medical professionals. The Journal of the American Medical Association is also known for its high standards of editorial quality and its commitment to the advancement of the medical profession. It is a publication that is both informative and influential, and it is a valuable resource for all medical professionals.

S A L I X repens.
Creeping dwarf Willow.

DIOECIA *Diandria.*

GEN. CHAR. Male, *Cal.* the scales of a catkin. *Cor.* none. *Nectary*, a gland at the base of the stamina.
 Female, *Cal.* like the male. *Cor.* none. *Style* cloven. *Capsf.* of one cell, with two valves.
Seeds downy.

SPEC. CHAR. Leaves entire, lanceolate, somewhat downy on both sides. Stem decumbent and creeping. Style simple; stigma in 4 nearly equal segments. Capsules smooth.

SYN. *Salix repens.* *Linn. Sp. Pl.* 1447. *Huds. Fl. An.* 428. *Witb. Bot. Arr.* 1105. *Relb. Cant.* 366.

S. pumila angustifolia, inferne lanuginosa, and *S. pumila angustifolia prona parte cinerea.* *Raii Syn.* 447. Also *S. alpina pumila*, *rotundifolia repens*, inferne subcinerea. *Ibid.* 448.

EVERY moist sandy heath abounds with this willow, which flowers in May, and ripens its fruit in June and July, when, as in most of this genus, the leaves arrive at their full size. The varieties of *S. repens* are numerous, differing in the breadth of their leaves, and in the greener or browner colour of the whole plant; hence Hudson and others have thought they had discovered *S. fusca* and *S. rosmarinifolia* among them; whereas the former is *S. arenaria* of our British writers (not of Linnæus), and the latter we have never seen of British growth. Professor Gouan of Montpellier mistook a widely different and non-descript species for *S. repens* of Linnæus.

The real one here figured has a very strong woody root, dark, brown or black, throwing out many prostrate or widely spreading stems, of which the flowering branches are generally erect. The leaves are lanceolate or elliptical, silky when young, and seldom quite smooth beneath when old; without stipulæ. Catkins not long; scales obtuse, hairy. Germen oval, silky, with a short undivided style, and a yellow spreading stigma, cloven almost equally into 4 lobes. Ripe capsule, smooth, lanceolate. The style and stigma must be particularly noticed in discriminating some of these small willows; indeed we stand in need of every help in so difficult a tribe.



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OROBANCHE ramosa.

*Branched Broom-rape.**DIDYNA MIA Angiospermia.*

GEN. CHAR. *Cal.* 2-lipped. *Cor.* ringent. *Capsf.* of one cell, with two valves, and many seeds. A gland at the base of the germen beneath.

SPEC. CHAR. Stem generally branched. Corolla with five segments.

SYN. *Orobanche ramosa.* *Linn. Sp. Pl.* 882. *Huds. Fl. An.* 266. *With. Bot. Arr.* 658. *Raii Syn.** 288.

MR. WOODWARD, who has so admirably illustrated this rare plant in the *Bot. Arr.* and who is one of the few people who have found it since Ray's time, was so obliging as to send us this recent wild specimen from a field at Mettingham in Suffolk, in which neighbourhood it grows plentifully, attached to the roots of hemp in a parasitical manner, and flowers in August.

The root is annual, a solid bulb, throwing out fleshy fibres which are entwined with those of the plant on which it grows. Stem erect, more or less obscurely zigzag, and never quite straight, clothed with a few scattered brown scales, and almost always branched, sometimes very copiously so. Spikes a continuation of the stem and branches, set with numerous sessile flowers, in an alternate order, with a brown concave bractea at the base of each. Calyx with 4 teeth, the 2 uppermost very distant; it can hardly be called two-lipped. The 2 upper segments of the corolla are rather the shortest.

We are by no means convinced that the *Orobanche flore minore* of Ray's Synopsis is a variety of this, but are rather inclined to refer it to *O. major*, if it be not a non-descript species. Neither are we certain that Mr. Pitchford's specimen from Northreps is the same with either. A sketch made from it when recent agrees better with *O. purpurea* of Jacquin (not Linnæus). The whole genus wants a thorough investigation.



Somerly del^t June 1 1794

JUNGERMANNIA pinguis.
Slippery Jungermannia.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male flowers sessile. (Hedwig.)

Female on a footstalk rising from a sheath. Capsule with 4 valves. Seeds attached to elastic filaments.

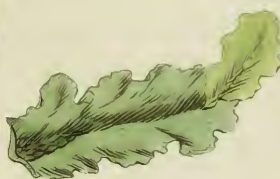
SPEC. CHAR. Stem none. Frond oblong, sinuated, slippery.

SYN. Jungermannia pinguis. *Linn. Sp. Pl.* 1602. *Huds. Fl. An.* 517. *Witb. Bot. Arr. V.* 3. 156. *Relb. Cant.* 420.

Lichenastrum capitulis oblongis juxta foliorum divifuras enascentibus. Raii Syn. 110. *Dill. Musc.* 509. *t.* 74. *f.* 42.

FOUND in boggy, marshy places, commonly producing its ripe capsules in April; this forward season (1794), it has been somewhat earlier. When very luxuriant, it grows erect in thick tufts, and does not flower; otherwise the fronds are horizontal, attached to the moist earth by hair-like fibres, and of a very wet, slimy, slippery substance, tender like boiled vegetables. From the incisions of the frond arise solitary tubular sheaths, each producing an upright simple pellucid stalk, terminated by a black oval capsule, called *anthera* by Linnæus, which bursts at the top into 4 valves, and is full of black elastic fibres, connected with numerous seeds.

We beg leave to point out an inaccuracy in the character of this genus in the *Bot. Arr.* as taken from Linnæus. It should be *Fruit-stalk bearing a naked flower*, that is, destitute of *calyx* and *corolla*. The Linnæan word *Anthera* is indeed properly changed for *Capsule*; but, by a strange oversight, the description of the real *male* flower is continued as if it were the *female*.





JUNGERMANNIA multifida.

Many-lobed Jungermannia.

CRYPTOGAMIA Alga.

GEN. CHAR. Male flowers sessile.

Female on a footstalk rising from a sheath. Capsule with 4 valves. Seeds attached to elastic filaments.

SPEC. CHAR. Stem none. Frond bipinnatifid.

SYN. Jungermannia multifida. *Linn. Sp. Pl.* 1602.*Huds. Fl. An.* 517. *Witb. Bot. Arr. V.* 3. 155.*Lichenastrum Ambrosiæ divisura. Raii Syn.* 111.*Dill. Musc.* 511. t. 74. f. 43.

THIS was gathered on Epping Forest, by Mr. E. Forster. It loves a moist shady situation like *J. pinguis*, but is not near so common. It flowers about the same time.

The fronds grow prostrate, and are cut into many obtuse irregular segments in a bipinnate order, their surface somewhat slimy to the touch. From towards their base arise solitary flower-stalks, clothed at the bottom with a white sheath, and terminating in a dark brown capsule, which quickly scatters its seeds, retaining at the last a few fibres sticking to the extremity of its expanded withered valves, as in other species.



R O S A spinosissima.

*Burnet Rose.**ICOSANDRIA Polygynia.*

GEN. CHAR. *Cal.* urn-shaped, fleshy, contracted at the orifice, terminating in 5 segments. Petals 5. *Seeds* several, bristly, fixed to the inside of the calyx.

SPEC. CHAR. Fruit globose, smooth as well as the flower-stalks. Stem clothed with very numerous straight slender spines. Leaflets smooth and round.

SYN. *Rosa spinosissima.* Linn. *Sp. Pl.* 705. *Huds. Fl. An.* 218. *With. Bot. Arr.* 522. *Lightf. Fl. Sc.* 260. *Fl. Dan. t.* 398.

R. pimpinellifolia. Linn. *Syst. Nat. ed.* 10. 1062.

R. pumila spinosissima, foliis Pimpinellæ glabris, flore albo. *Raii Syn.* 455.

ROSES, the delight of gardeners, of poets, in short of all who have ever considered any plant as an object of admiration, and which compose perhaps the most elegant genus on the whole that we know, are by no means easily intelligible to a botanist. Their beautiful forms, so delicately varied, are yet so nearly allied, that the line of specific discrimination can scarcely be accurately drawn. This species, indeed, is one of the most distinct; yet even this has been described twice by our great master. It appears from his herbarium, that his *R. pimpinellifolia* is exactly (as Haller believed) the same plant, not even a variety, as his original *spinosissima*; of which, not happening to have it before him when he wrote the 10th edition of *Syst. Naturæ*, he forgot the appearance.

It occurs with us in the borders of fields on a gravelly or sandy soil, flowering in July. The bushes are about 2 feet high, much branched, and may be known by the very numerous needle-like prickles, abundant on the young branches, but which often disappear from the old ones. The leaflets are about 9, round, smooth, serrated, very like the leaves of burnet (*Poterium Sanguisorba*); their common stalk is sometimes prickly, and the flower-stalk more rarely so. Petals cream-coloured, yellow at the base, delicately fragrant, sometimes (but rarely) striped with red. Fruit globose, deep red, black when quite ripe, smooth, though Haller describes it as spinous.

Fl. Dan. t. 398. is this plant, and not *R. arvensis*.



J^o Sonerby del^t July 1^o 1794.

R O S A arvensis.

White Dog-rose.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* urn-shaped, fleshy, contracted at the orifice, terminating in 5 segments. *Petals* 5. *Seeds* several, bristly, fixed to the inside of the calyx.

SPEC. CHAR. Fruit globose, smooth as well as the flower-stalks. Stem and leaf-stalks prickly. Flowers generally clustered.

SYN. *Rosa arvensis.* *Huds. Fl. An. ed. 1. 192. ed. 2. 219. Linn. Mant. 2. 245. With. Bot. Arr. 521. Relb. Cant. 193.*

R. sylvestris altera minor, flore albo nostras. Raii Syn. 455.

FREQUENT in our hedges, and thickets in the borders of fields, where it flowers in June and July; yet though here so common, it seems to be almost peculiar to Britain. Perhaps it may grow in other parts of Europe, but may not have been well discriminated by botanical writers. The figure in *Flora Dan.* t. 398, quoted by Linnæus, is *R. spinosissima*; and it is wonderful Mr. Hudson should follow him in so gross an error, though, having himself established this species, he ought to have known it well. We beg leave on this occasion to hint a general admonition against copying synonyms without examining them.

Rosa arvensis has round, glaucous, often mahogany-coloured stems, of which last colour are commonly the germens and flower-stalks; and the last are covered with a glandular roughness. The prickles are hooked, but differ from those of *R. canina* in being smaller. The leaflets are mostly 5, oval, pointed and smooth. Flower-stalks about 3 or 5 in a terminal cluster (rarely solitary), not all exactly from one point, accompanied by a few lanceolate bractææ, and each bearing a single white flower, like the common dog-rose, but never red or bluish-coloured, and less fragrant. The germen is oblong, but in ripening becomes globose, and deep-red, terminated by the simple base of the styles, at that period elongated, as is well remarked by Dr. Stokes in *Bot. Arr.* 522.



A R E N A R I A *peploides.*

Sea Chickweed.

DECANDRIA Trigynia.

GEN. CHAR. *Cal.* five-leaved, spreading. *Petals* five, undivided. *Capsf.* of one cell, with many seeds.

SPEC. CHAR. Leaves ovate, acute, fleshy.

SYN. *Arenaria peploides.* *Linn. Sp. Pl.* 605. *Huds. Fl. An.* 191. *With. Bot. Arr.* 458.

Alfne marina, foliis Portulacæ. *Raii Syn.* 351.

PECULIAR to the sandy shores of the sea, but there found in abundance. Its juices partake of the alkaline nature of other succulent maritime plants.

The roots are stringy, creeping, and extend very far, throwing out fibres at every joint. Stem alternately branched, forming thick leafy procumbent tufts, angular, smooth and lucid, as is every part of the herb. Leaves sessile, ovate, entire, slightly recurved, of a beautiful bright green. Flowers on short footstalks, solitary at the divisions of the stem, small, white, and not very conspicuous. Calyx quite destitute of ribs. Germen with a row of yellowish glands round its base. Styles very short.

No other species of *Arenaria* can be confounded with this. It flowers about the middle of Summer, and is perennial.



Gentiana L.

TRIFOLIUM medium.

*Zigzag Trefoil.**DIADELPHIA Decandria.*

GEN. CHAR. *Flowers* more or less capitate. *Pod* scarcely longer than the calyx, never bursting, but falling off entire.

SPEC. CHAR. Spikes lax. Petals nearly equal. Stipulæ awl-shaped and conniving together. Stems zigzag and branching. *Afzelius*.

SYN. *Trifolium medium*. *Linn. Faun. Suec. ed. 2. p. 558. Hudf. Fl. An. ed. 1. 284. Afzelius Tr. of Linn. Soc. V. 1. 237.*

T. flexuosum. *Jacq. Fl. Austr. V. 4. tab. 386. With. Bot. Arr. 795.*

T. alpestre. *Hudf. Fl. An. ed. 2. 326.*

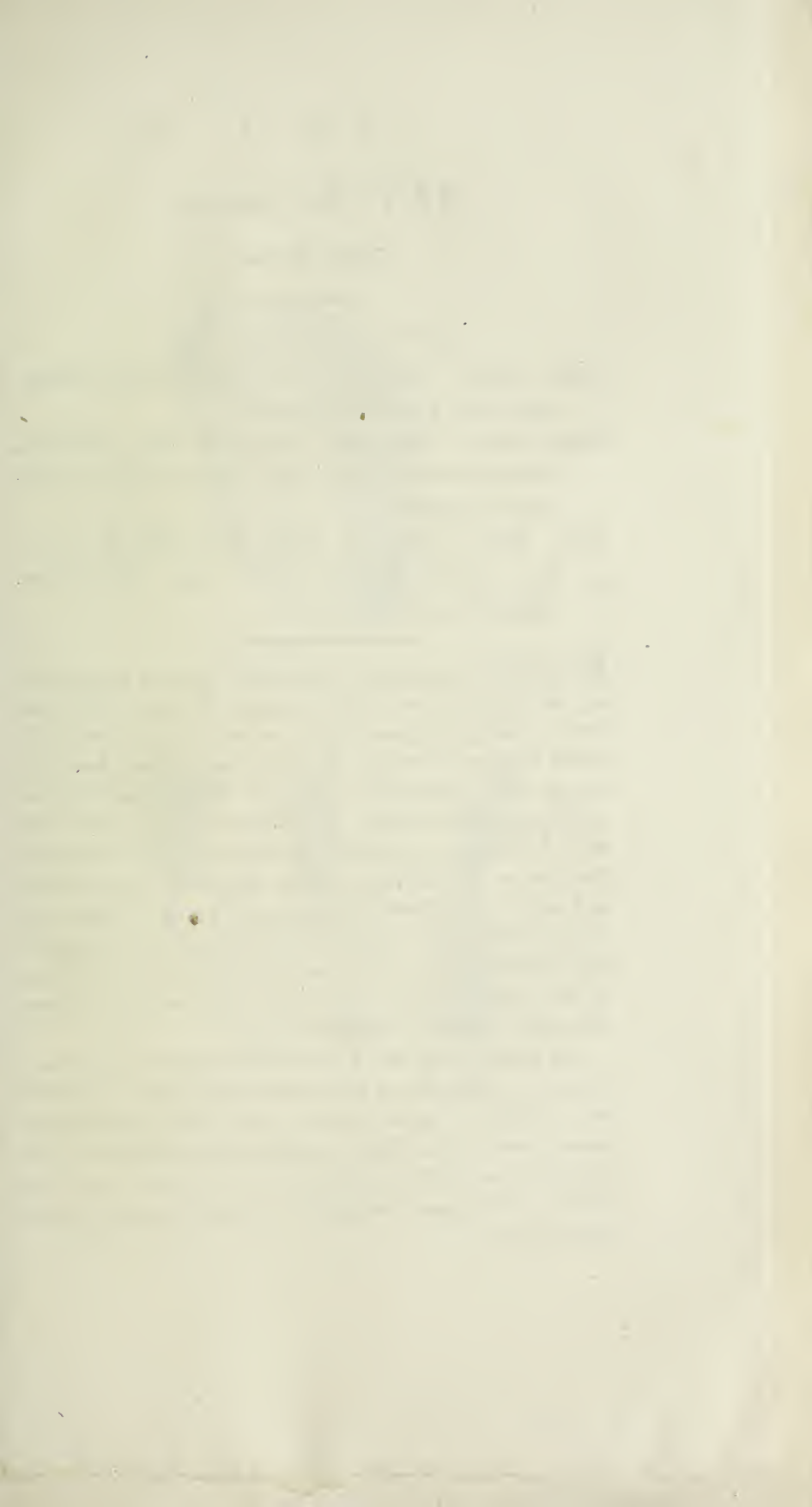
T. purpureum majus, foliis longioribus et angustioribus, floribus saturatioribus. *Raii Syn. 328.*

AFTER the most elaborate and accurate dissertation of Mr. Afzelius above quoted, it would be vain to attempt any new observation upon this Trefoil, or the two other species which he has illustrated. This is found in dry elevated pastures, preferring a chalky soil, or a gravelly one with a clay bottom, and differs from *T. alpestre* (which is not a British plant) in having larger and more lax heads of flowers, broader and shorter leaves, a branched stem, stipulæ approaching each other, and ribbed; from *T. pratense*, Common Clover, it differs in its lax heads of flowers, longer and narrower stipulæ, and more unequal calyx: from both it is distinguished by its remarkably zigzag stem. The root is perennial, and the flowers appear in July.

This species is said not to be eligible for cultivation, as it does not thrive in a good loose soil; but Prof. Martyn justly remarks, (*Flora Rustica*, No. 5.) that it may therefore succeed on stubborn hungry clay, like its native places of growth.



Flower by del' July 1. '794.



BRYUM calcareum.

*Chalk Bryum.**CRYPTOGAMIA Musci.*

GEN. CHAR. *Caps.* with a lid. *Veil* smooth. *Flower-stalk* from a terminal tubercle.

SPEC. CHAR. Stem none. Capsules erect, obconical, bordered with sixteen ciliæ. Leaves erect, cylindrical, bluntish.

SYN. *Bryum calcareum.* *Dicks. Crypt. Fasc.* II. 3. t. 4. f. 3. *With. Bot. Arr.* V. 3. 95. *Relb. Cant. Suppl.* III. 9.

FOUND in great plenty at Dartford, May 24, 1794, covering the sides of the chalk-pit nearest the west end of the town. Each plant grows from a minute cavity in the chalk, which it seems to occupy for some time without flowering, during which early state it makes the chalk look as if clothed with bright green velvet. The plants are solitary; the roots small and fibrous, not creeping. Leaves 6 or 8, erect, broad and sheathing at the base, then narrow, cylindrical, obtuse, smooth and entire. Stalk scarcely exceeding the leaves in length, upright, round, green. Capsule erect, inversely conical, bordered with 16 lanceolate, equal, spreading teeth. Lid almost as long as the capsule, with a curved beak. Veil oblique, reaching about half way down the capsule.

Mr. Dickson and Mr. Crowe first ascertained this minute species on chalky ground about Newmarket heath, and the former published it in his valuable work on the new Cryptogamous plants of Great Britain, a publication of the first merit for originality and solidity of observation, and which proves how much a consummate investigator may detect even on the most beaten ground.



J. Smiley del. July 1 1794

B Y S S U S purpurea.

*Purple Byffus.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Whole plant consisting of down or simple powder. *Fruetification* unknown.

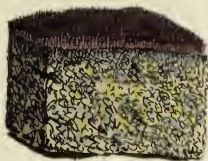
SPEC. CHAR. Filaments erect, simple or branched, purplish.

SYN. Byffus purpurea. *Lightf. Fl. Scot.* 1000. *With. Bot. Arr. V.* 3. 276.

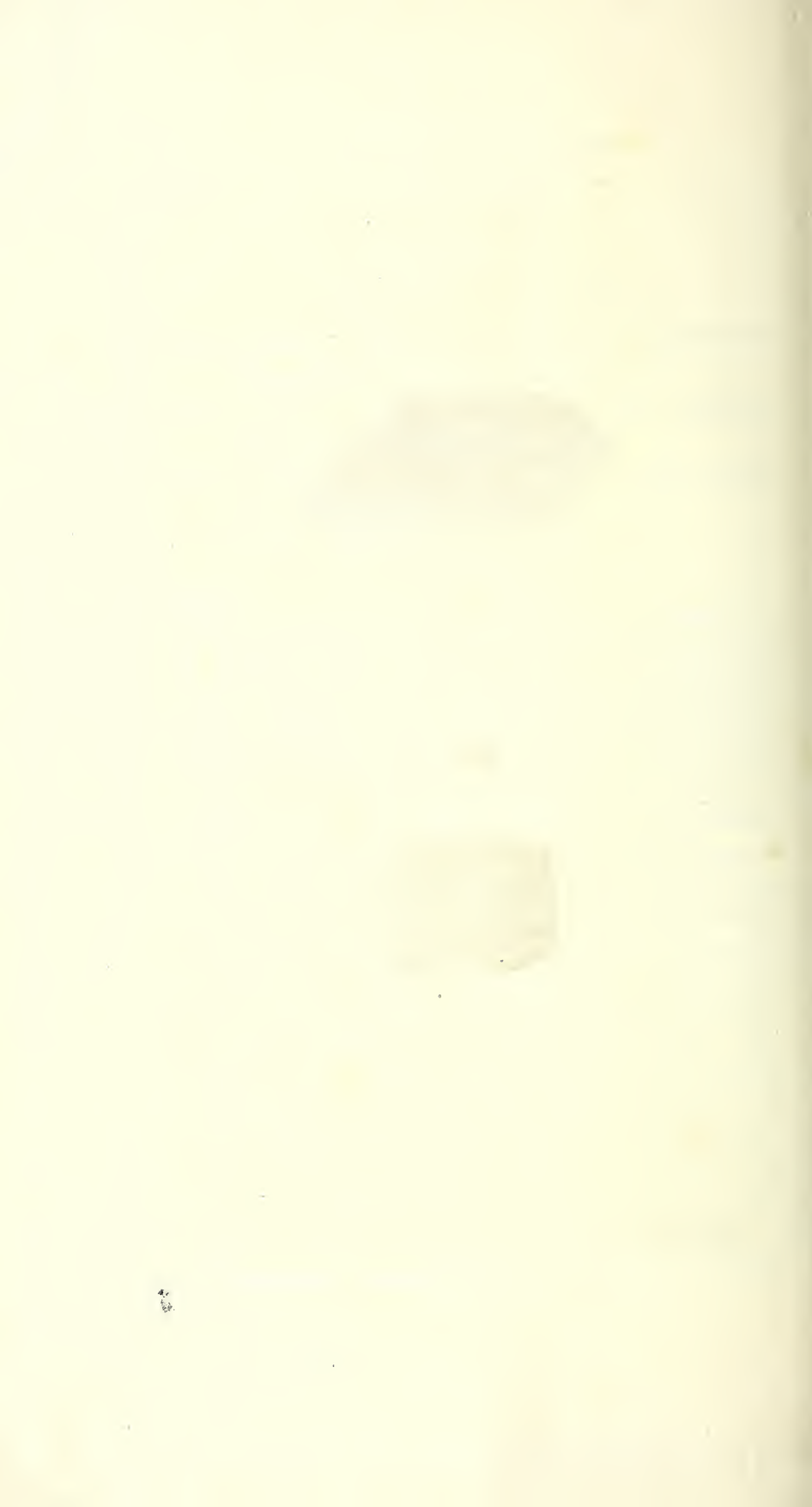
B. rubra. *Hudf. Fl. An.* 605. *App.* 663.

WE are obliged for this elegant and curious production to the Rev. Mr. Hugh Davies of Aber in North Wales, from whom the late Mr. Hudson also received many of his rarest plants. It is found on the micaceous rocks of Anglesea, forming broad uniform patches of a dark reddish purple colour, and scarcely the breadth of a hair in thickness, so very short are the minute, erect, thick-set, and mostly branched, filaments of which it is composed. When much moistened these filaments become clotted together in clusters, and in that moist state it exhales a kind of sea-weed scent, more like the Florentine Iris root than violets, in which respect it agrees with the B. Iolithus of Linnæus; but the latter is really a crustaceous Lichen, and of a paler colour than this. How far Linnæus may have confounded them, or whether ours may be Micheli's *tab.* 89. *f.* 3. (it is surely not his *tab.* 90. *f.* 2.) we dare not determine. Ours cannot be called "*aurea*" (gold-coloured), neither is it at all crustaceous, but a true filamentous Byffus. We think with Haller the powdery Byffi are most probably Lichens.

Mr. Lightfoot found his B. purpurea on the base of Abbot Mackinnon's tomb in Y-Columb-kill, where a naturalist of our acquaintance has since sought for it in vain. Perhaps therefore his species may not be perennial. We quote Mr. Hudson on his own authority, though his name *rubra* is not very apposite.



J. Lewis del. July 1794.



1893

March 1st

Dear Sir

I have the honor

to acknowledge the receipt

of your letter of the 28th inst.

in relation to the above

mentioned matter.

I am sorry to hear

that you are unable

to attend to the same

at present.

I am, Sir, very

truly and respectfully,

Yours, very truly,

J. H. [Signature]

[Signature]

[Signature]

[Signature]

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LICHEN immerfus.

Sunk Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

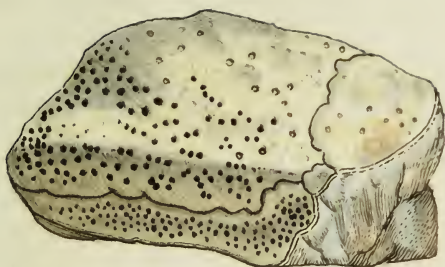
SPEC. CHAR. Shields entirely black, each sunk into a cavity in the hard, whitish, smooth crust, and deciduous.

SYN. Lichen immerfus. *With. Bot. Arr.* 169.
Relb. Cant. Suppl. I. 23. *Weber Fl. Goetting.* 188.
Smith's Tour, V. 1. 171. *Sibth. Oxen.* 318.

FOUND in Derbyshire and other counties at all seasons on calcareous rocks; we have not observed it on any other.

The crust is almost as hard as the stone on which it grows (though very distinct from it) half a line, or not so much, in thickness, nearly entire in the margin, greenish internally, its surface white, smooth, full of little hemispherical cavities of various sizes and depths, the bottom of each of which is occupied by a black depressed smooth shield, with an entire margin of a more intense black than the disk.

These shields in time fall out, leaving the almost everlasting crust full of cavities, which (if the edge of the specimen be cautiously pared away) may often be found to extend even into the very substance of the stone. See Dr. Smith's Tour above quoted. Micheli mentions, p. 97, several Lichens which bear their shields in cavities; his No. 21 and 22 best agree with ours, but not having seen his specimens we dare not positively quote him. We have not indeed seen Mr. Relhan's nor Dr. Sibthorp's *L. immerfus*, but there can scarcely be any doubt of theirs being the same with ours.



LICHEN parietinus.

Yellow Wall Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

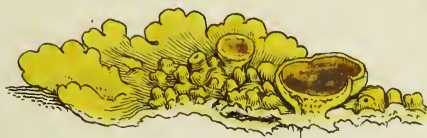
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated. Leaves crisped, obtuse, orange-coloured, whitish beneath. Shields deep orange, with a paler entire margin.

SYN. Lichen parietinus. *Linn. Sp. Pl.* 1610. *Huds. Fl. An.* 533. *With. Bot. Arr. Vol.* 3. 186. *Relb. Cant.* 428. *Sibth. Oxon.* 326. *Lightf. Scot.* 822.*Lichenoides crusta foliosa scutellata, flavescens. Raii Syn.* 72.*L. vulgare sinuosum, foliis et scutellis luteis. Dill. Musc.* 180. *tab.* 24. *f.* 76. β . Lichen juniperinus. *Huds. Fl. An.* 542. *With. Bot. Arr. V.* 3. 197. *Lightf. Scot.* 836.

THIS is common every where, and at all seasons, on walls, stones, trunks of trees, posts, &c. The more it is exposed to the sun, the deeper is its orange colour. Moisture and shade render it more lax, leafy, and of a greenish or pale olive hue. So it most commonly appears on trees and bushes. This we have marked as a variety (β) and it is the *L. juniperinus* of our British writers, though by no means that of Linnæus.

The under side is white, especially towards the centre, and adheres to bodies on which it grows by white fibres. The divisions of the frond are more or less imbricated, often wrinkled, and sometimes powdery. The shields numerous, their disk either deep orange or brownish. Lightfoot says this Lichen will dye yellow. Helwing formerly asserted that when moistened it would stain paper or linen of a beautiful and lasting flesh-colour, a property which Dillenius could not discover, and which we have looked for repeatedly in vain.



f. Sowerby del. Aug. 1794.

PICRIS hieracioides.

Hawkweed Ox-tongue.

SYNGENESIA Polygamia æqualis.

GEN. CHAR. *Receptacle* naked. *Cal.* double. *Down* more or less feathery. *Seeds* rugged.

SPEC. CHAR. *Calyx* lax. *Leaves* mostly undivided. *Flower stalks* furnished with scales up to the calyx.

SYN. *Picris hieracioides.* *Linn. Sp. Pl.* 1115. *With.* *Bot. Arr.* 830. *Relb. Cant.* 297.

Hedypnois hieracioides. *Huds. Fl. An.* 342.

Hieracium asperum majori flore in agrorum limitibus. *Raii Syn.* 167.

THIS occurs abundantly about the borders of fields in a gravelly or calcareous soil, flowering in July and August. It is a plant of rude growth and not very attractive appearance. The root, we believe, is perennial, or at least biennial; stem much branched, three feet high; the branches furrowed, purple on their upper side and in their axillæ, as Linnæus most truly observes. Leaves oblong, sessile, undivided, except that the radical ones are frequently grossly dentated. The herb is rough with hooked bristles. Flowers bright yellow, the lateral ones rising on elongated branches above that which terminates the central stem. Calyx-leaves all rough on the back. Seed-down slightly feathery, sessile.

Dr. Stokes's remark in the Botanical Arrangement (p. 855, note), that the *Hedypnois* of Hudson is an artificial genus, is perfectly just. Its species are no way naturally allied, and the down, being sessile or stipitate, affords no certain permanent character in this tribe.



CAUCALIS daucoides.
Small Caulis or Bastard Parsley.

PENTANDRIA Digynia.

GEN. CHAR. *Corollæ* radiate. *Fruit* nearly oval, striated, rough with rigid bristles. Some flowers abortive.

SPEC. CHAR. General umbels three-cleft, without involucre : partial ones ripening about three seeds, and furnished with a three-leaved involucre.

SYN. *Caucalis daucoides.* *Linn. Syst. Veg. ed. 14.* 276. *Huds. Fl. An.* 112. *With. Bot. Arr.* 271. *Relb. Cant.* 109. *Sibth. Oxon.* 92.

C. leptophylla. *Huds. Fl. An. ed. 1.* 99. *Linn. Sp. Pl. ed. 1.* 242 ? *ed. 2.* 347.

C. tenuifolia, flosculis subrubentibus. *Raii Syn.* 219.

C. albis floribus. *Ger. em.* 1021.

FOUND, though rarely, in cornfields where the soil is dry and chalky, most plentifully in Cambridgeshire, flowering in the early part of summer.

The root is annual and tapering. Stem branched and divaricated, somewhat zigzag, deeply grooved, a little hairy at the joints only. Leaves three-cleft at their base, then thrice compounded, their segments very narrow, divaricated, pointed, decurrent and smooth, of a pale green. Umbels lateral and terminal, on long footstalks, of scarcely more than 3 rays, though those are sometimes accompanied by 1 or 2 weak and barren ones. General involucre none. Partial umbels of about 5 almost sessile flowers, of which 3 only perfect their seeds, and are accompanied by 3 small lanceolate involucella. Petals nearly equal, generally reddish. Germen and seeds clothed with rigid hooked bristles, intermixed with hairs, but we do not perceive those hairs to be, as Linnæus says, verticillated. That author is singularly confused in his accounts of this genus, nor are we quite sure of what he meant at first by *C. leptophylla*. It is however certain, that the long description of *C. daucoides* in both editions of *Sp. Pl.* belongs to *C. grandiflora*, and not (as erroneously mentioned in *Syst. Veg.*) to *C. platycarpus*, whatever Linnæus might at any time intend by the latter.





CAUCALIS latifolia.

*Broad-leaved Caulalis.**PENTANDRIA Digynia.*

GEN. CHAR. *Corollæ* radiate. *Fruit* nearly oval, striated, rough with rigid bristles. Some flowers abortive.

SPEC. CHAR. General umbels three-cleft, with membranous involucre: partial ones ripening about 5 seeds. Leaves pinnated, serrated.

SYN. *Caucalis latifolia*. *Linn. Syst. Veg. ed. 14.* 276.
Huds. Fl. An. 113. *With. Bot. Arr.* 271. *Relb. Cant.* 110.

C. arvensis echinata latifolia. *Raii Syn.* 219.

Tordylium latifolium. *Linn. Sp. Pl.* 345. *Huds. Fl. An. ed. 1.* 98.

THIS is rather less frequent than the last, but thrives in the same kind of soils and situations. It is one of the most beautiful of umbelliferous plants, and makes a conspicuous appearance in the dry fields of Cambridgehire in July.

Root annual. Stem taller and less spreading than in *C. daucoides*, but as deeply furrowed, and more rough. Leaves rather glaucous, rough, simply pinnated, serrated; the lower pair of leaflets sometimes compound at the base. Umbels of rarely more than 3 rays, with a general involucre of 3 or 4 short ovate leaves, ribbed in the middle, with a membranous border. Partial umbels of several nearly sessile flowers, of which about 5 come to perfection. Partial involucre like the general ones. Flowers red, a little radiate. Seeds very rough with reddish upright straight rough bristles.



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Veronica filiformis

CAUCALIS nodosa.

Knotted Caulalis.

PENTANDRIA Digynia.

GEN. CHAR. *Corollæ* radiate. *Fruit* nearly oval, striated, rough with rigid bristles. Some flowers abortive.

SPEC. CHAR. Umbels lateral, simple, nearly sessile.

SYN. *Caucalis nodosa.* *Huds. Fl. An.* 114. *With. Bot. Arr.* 273. *Relb. Cant.* 111. *Sibth. Oxon.* 93.

C. nodosa echinato femine. *Raii Syn.* 220.

Tordylium nodosum. *Linn. Sp. Pl.* 346.

COMMON on banks and about the borders of fields, especially on a gravelly or calcareous soil, flowering from May to July, after which its dry stalks and heads of seeds remain for a considerable time, and become bleached at length by the weather.

Root annual. Stems prostrate, branched, leafy, striated, roughish with reflexed hairs. Leaves bipinnate, and sharply cut; opposite to each of which, and often partly embraced by its sheathing footstalk, stands a small simple umbel of several minute, white or reddish, scarcely radiating, flowers, each on a very short flowerstalk, and surrounded by linear hairy involucre. The germens and seeds, both in the Linnæan specimens and in ours, are all rough, the inner ones with warty points, the outermost, and especially on their outside, with longish, straight, rough, rigid hairs, as in other species of *Caucalis*, to which genus (and not to *Tordylium*) this plant is surely to be referred upon that account, whether it has any abortive flowers or not. Future observations must decide whether the smoother seeds of the centre are ever really abortive, or destitute of a vegetative principle. Practical observers of nature in the country have it in their power to clear up many points of this kind, relative to the most common plants, which, if communicated from time to time to those who have the means of making them public, would materially advance the interests of science.



"Daucus, del. rep." 1770

HELLEBORUS viridis.

*Green Hellebore.**POLYANDRIA Polygynia.*

GEN. CHAR. *Cal.* none. *Petals* five or more. *Nectararies* tubular, two-lipped. *Capsules* nearly upright, with many seeds.

SPEC. CHAR. Stem many-flowered, leafy. Leaves fingered.

SYN. *Helleborus viridis.* *Linn. Sp. Pl.* 784. *Syst. Veg. ed.* 14. 519. *Huds. Fl. An.* 245. *With. Bot. Arr.* 581. *Relb. Cant.* 217. *Sibth. Oxon.* 176.

H. niger hortensis, flore viridi. *Raii Syn.* 271.

NEITHER of our Hellebores can be called common, but this is the more scarce of the two. It is found in thickets and dry pastures, chiefly in chalk countries. Mr. Jacob Rayer brought this specimen from the woods about Great Marlow and High Wickham, Bucks. It is perennial, and flowers in April or May.

The root is fleshy, acrid and purgative like the rest of its genus, and not inferior to any of them in activity. It throws out many long simple fibres, and produces a stem scarcely a foot high, round, once or twice divided, with a fingered serrated leaf at each division, in form like the radical ones, but smaller. Linnæus in his not very accurate manuscript description of this plant, still more confused in *Mant.* 408, seems to have intended calling these stem-leaves *bractææ*, on account of their analogy with the *bractææ* of *H. foetidus*, and was thence led into the paradox of denominating the stem of *H. viridis* a *scapus*, which however he corrected in *Syst. Veg.* We prefer the original specific character to that in the place last mentioned. The flowers are solitary, on shortish footstalks, and green in all their parts. Petals spreading, permanent. Styles 3 or 4, scarcely more, about as long as the corolla. The whole herb is smooth, and of a bright shining green.





CHELIDONIUM hybridum.

*Violet Horned-Poppy.**POLYANDRIA Monogynia.*

GEN. CHAR. *Cal.* two-leaved. *Petals* four. *Pod* linear, of one cell.

SPEC. CHAR. Flower-stalks single-flowered. Leaves pinnatifid, with linear segments. Stem smooth. Pods with three valves.

SYN. *Chelidonium hybridum.* *Linn. Sp. Pl.* 724. *Huds. Fl. An.* 229. *Witb. Bot. Arr.* 549. *Relb. Cant.* 201.

Papaver corniculatum violaceum. *Raii Syn.* 309.

THE corn-fields of Cambridgeshire afford this rare plant, from whence we have just received it by favour of the Rev. Mr. Hemsted, flowering in the middle of May, a much earlier season than is attributed to this species by Mr. Hudson. It was once observed in a field 4 miles from Aylsham, in the road from Norwich to Cromer, but is, we believe, unknown in other parts of Britain.

The small annual root produces one upright, round, much-branched stem, clothed with alternate leaves of a dark shining green, often triply pinnatifid, with linear segments. The calyx falls off before the flowers are well expanded, and the delicate violet-coloured petals last but a very few hours. The stamens are capillary, and not very numerous. Germen linear, triangular, with a furrow along each side, bristly towards the summit, and terminated by three stigmas. Pod long, of three valves, producing many seeds. A few hairs are sometimes scattered over the stem and calyx.

Linnaeus imagines the plant before us may have originated from *Papaver Argemone* impregnated by some species of *Chelidonium*; but we see scarcely any reason for such a supposition, nor can we conceive which *Chelidonium* he had in view.



HYPNUM intricatum.

Matted Hypnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* with a lid. *Veil* smooth. *Flower-stalk* from a lateral tubercle invested with scales.

SPEC. CHAR. Shoots creeping, with shortish branches. Leaves spreading, lanceolate, taper-pointed. Capsules urn-shaped, inclining, with a recurved beak.

SYN. *Hypnum intricatum*. Schreb. *Fl. Lips.* 99. *Dicks. Crypt. fasc.* 2. 10. *Willd. Bot. Arr. v.* 3. 120.

THIS moss was first discovered in England by Mr. Robert Teesdale, F.L.S. in some woods on the south-east side of the river at Matlock-bath, from whence Dr. Smith sent it to Mr. Dickson, and from his original specimens our figure was drawn. It well agrees with Schreber's description, and with the figures of Vaillant quoted by him (*tab.* 28. *f.* 2, 6, 7, 8).

The shoots thickly interwoven form a close dark-green mat on the decayed bark of trees in damp woods, and extend to several inches in length. The branches are short and slender, clothed with alternate, lanceolate, sharp-pointed, entire leaves, those at the summit being palest; and, as Schreber remarks, the leaves are most lax and spreading in a dried state. Numerous reddish stalks, scarcely an inch high, each arising from an oval bulb at the side of the stem, bear small, short, inclining, urn-shaped capsules, red at the margin, and fringed with numerous teeth. Their lid is short, swelling, and terminated by a shortish recurved beak. Veil slender, cylindrical, whitish, but not so remarkably white and conspicuous as in *H. serpens*, which this species otherwise much resembles in habit, though not in the form of its capsules.



ASTRAGALUS glycyphyllos.

*Sweet Milk-Vetch, or Wild Liquorice.**DIADELPHIA Decandria.*GEN. CHAR. *Pod* of two cells, swelling.

SPEC. CHAR. Stem prostrate. Pods somewhat triangular, curved. Leaves longer than the spikes of flowers; leaflets oval.

SYN. *Astragalus glycyphyllos.* Linn. *Sp. Pl.* 1067. *Huds. Fl. An.* 322. *With. Bot. Arr.* 787. *Reb. Cant.* 277. *Sibth. Oxon.* 227.A. *luteus perennis procumbens, vulgaris five sylvestris.* *Raii Syn.* 326.

FOUND about way sides, borders of fields, and similar places, on a chalky or gravelly soil in various parts of England, less frequently in Scotland. It is perennial, and flowers in June; the seeds ripen about August.

The stems growing prostrate among grass and bushes, added to the greenish hue of the whole plant, cause it to be frequently overlooked, though often extending 2 or 3 feet in length. They are more or less zigzag, angular and striated. Leaves alternate, consisting of about 5 to 7 pair of roundish or oval leaflets, with an odd one at the end, and a pair of ovate pointed stipulæ at the base. Spikes of flowers arise from the bosoms of the leaves, solitary, on foot-stalks, shorter than the adjoining leaf. The flowers are pale sulphur-coloured, often with a brownish tinge. Pods reddish, inflated, containing many seeds.

The leaves when chewed have a sweetish taste, which soon changes to a nauseous bitter. Cattle are not fond of them.



J. S. Searby del. Sep. 1, 1994

S I U M latifolium.

*Broad-leaved Water Parsnep.**PENTANDRIA Digynia.*GEN. CHAR. *Fruit* nearly oval, compressed, striated.*Involucrum* general and partial, of many leaves.*Petals* heart-shaped, uniform.

SPEC. CHAR. Leaves pinnated; leaflets oblong-lanceolate, equally serrated. Umbels terminal.

SYN. *Sium latifolium.* *Linn. Sp. Pl.* 361. *Huds. Fl.**An.* 118. *With. Bot. Arr.* 291. *Relb. Cant.* 115.*Sibth. Oxen.* 96.*S. latifolium foliis variis.* *Raii Syn.* 211.

SENT by Mr. Woodward from Norfolk, where it is not uncommon, nor is it of very rare occurrence in rivers and fens throughout England; but the umbelliferous tribe has been more overlooked than most others, except Cryptogamia. This is one of the largest British plants of that tribe. Its perennial root, creeping among mud and gravel, throws up round, hollow, deeply furrowed stems 4 or 5 feet in height, clothed with alternate leaves, composed of 7 or 9 leaflets, which vary much in breadth, but are always very equally and neatly serrated, in which respect they differ materially from *S. angustifolium*, as well as in being much longer. Mr. Hudson well remarks, that such as grow under water are often lacinated. The umbels are terminal, large, and many-flowered. Involucra various in size and figure, sometimes lobed and often serrated. Seeds small.

It is a plant of an acrid poisonous quality, particularly the roots.



FRANKENIA lævis.

*Smooth Sea-Heath.**HEXANDRIA Monogynia.*

GEN. CHAR. *Cal.* 5-cleft, funnel-shaped. *Petals* 5.
Stigmas 3. *Caps.* of one cell, with 3 valves.

SPEC. CHAR. Leaves linear, clustered, ciliated at the base.

SYN. *Frankenia lævis.* *Linn. Sp. Pl.* 473. *Huds. Fl. An.* 137. *With. Bot. Arr.* 367. *Relb. Cant.* 135.
Lychnis supina maritima Ericæ facie. *Raii Syn.* 338.

A NATIVE of muddy salt marshes, more especially on our eastern coasts. Mr. Lilly Wigg sent it from Yarmouth. It is perennial, and flowers after midsummer.

Root woody. Stems procumbent, round, branched. Leaves in little clusters, small, succulent, linear, or rather lanceolate and revolute, dilated at the base into a pair of minute, membranous, ciliated stipulæ. Flowers mostly at the divarications of the branches, rarely terminal, solitary, sessile, delicate and elegant in form and colour, like those of a little red pink or campion. Calyx with 5 (rarely more) teeth, angular. Nectary a yellow scale attached to the claw of each petal. Stamina and Pistillum much resembling those of the *Lychnis* tribe, to which the plant before us is nearly allied, though so different from most of them in habit.

This genus was first determined by Micheli, who named it *Franca* after his friend Franchi, a Florentine physician and botanist, born at Lucca, who had a principal hand in founding the Botanical Society of Florence. It should seem that Linnæus did not think this gentleman's claims to such an honour sufficient, and therefore changed the name to *Frankenia*, to perpetuate the memory of Frankenius, professor at Upsal in the middle of last century, author of a not very useful catalogue of plants called *Speculum botanicum*, of which there are 2 editions, both at present very rare.



H E R N I A R I A *glabra.**Smooth Rupture-Wort.**PENTANDRIA Digynia.*

GEN. CHAR. *Cal.* in 5 segments. *Cor.* none. Five barren *stamina*. *Capsule* with one *seed*.

SPEC. CHAR. Herbaceous and smooth.

SYN. *Herniaria glabra.* *Linn. Sp. Pl.* 317. *Hudf. Fl. An.* 108. *Willd. Bot. Arr.* 250.

Herniaria. *Raii Syn.* 160.

THIS was found in Ray's time in gravelly soil about the Lizard point, Cornwall, where it still grows abundantly. The Rev. Mr. Hemsted gathered this wild specimen near Newmarket.

Root taper, annual. Stems several, various in length, spreading flat on the ground in the form of a star, alternately branched, round, sometimes minutely pubescent. Leaves opposite about the lower part of the stem, one often smaller than the other, elliptical, entire, smooth. *Stipulæ* membranous. Flowers in leafy clustered racemi, opposite to the solitary leaves, small, green, short-lived, very numerous. The calyx is closed after flowering, and embraces the ripening capsule. It flowers about July and August.

Whence this plant obtained its absurd name, and credit for curing ruptures, is hardly worth enquiring.

The variety β of Mr. Hudson is manifestly (from Pnykenet's figure copied by Petiver) nothing but *Glaux maritima*. What *H. lenticulata* of Linnæus may be, it is not our purpose now to determine, but there is much reason to suppose it *Cressa cretica*.



GALEOPSIS Tetrahit.

*Red Hemp-Nettle.**DIDYNAMIA Gymnospermia.*

GEN. CHAR. Upper lip of the *corolla* slightly notched, vaulted; lower lip with two teeth on its upper side.

SPEC. CHAR. Stem swelled below the joints. Upper whorls crowded together. Calyx pungent.

SYN. Galeopsis Tetrahit. *Linn. Sp. Pl.* 810. *Huds. Fl. An.* 257. *With. Bot. Arr.* 608. *Relb. Cant.* 228.

Lamium cannabino folio vulgare. Raii Syn. 240.

A TROUBLESOME weed in corn-fields, gardens, &c. on a gravelly soil, but being strictly annual is easily eradicated before flowering. The stem is quadrangular, but much swelled below 2 or 3 of the lowermost joints. Every part is rough with very sharp, but not venomous, prickles, and the calyx-teeth are very pungent. The herb has a strong, not aromatic, odour when bruised. The corolla varies much in size and colour, from purple to white, but the base of the lip seldom loses its elegant dark streaks. The antheræ are singularly two-lobed, and hairy.

Dr. Smith found at Matlock in 1788 a remarkable variety, whose terminal flowers were always regularly 4-cleft and salver-shaped, with 4 equal stamina, while all the rest had their proper form, as mentioned in his edition of *Linn. Flo. Lapponica*, p. 201.

The beautiful variety δ of Hudson, with a large yellowish flower, is so remarkable, we shall give a figure of it when it comes in our way; nor indeed are we quite certain of its not being a distinct species.



J. G. Sowerby del. 1^o Oct. 1704.

GENISTA pilosa.

Hairy Green-Weed.

DIADELPHIA Decandria.

GEN. CHAR. *Cal.* 2-lipped, with 2 teeth above, 3 below. *Standard* oblong, bent backwards from the rest of the flower.

SPEC. CHAR. Leaflets lanceolate, obtuse. Stem tuberculated, prostrate.

SYN. *Genista pilosa.* *Linn. Sp. Pl.* 999. *Huds. Fl. An.* 311. *With. Bot. Arr.* 759.

HIGH sandy heaths about Bury produce in abundance this very rare plant, and we received it from thence by favour of William Mathew, Esq. flowering in May. After the flowers are past, it is (as Mr. Woodward observed) very difficult to be found; and either from this cause, or its being extremely local, escaped the notice of Ray and the accurate observers of his day.

Root woody and perennial. Stems like those of a dwarf willow, prostrate, branched, tuberculated wherever former leaves have grown, angular and leafy towards their extremities, and their very youngest branches are filky, like the backs of the leaves, which are ternate, small and obtuse. Flowers numerous, solitary or in pairs, of a full yellow, with filky footstalks and calyx. The teeth of the latter are all very short, and the 2 upper ones broadest. Seeds about 3 or 4 in the unripe germen. The back of the standard is often as filky as the calyx, and even the keel is hairy.

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o. Brouss. del. G. Car. 1794

OSMUNDA regalis.

Osmund royal, or Flowering Fern.

*CRYPTOGAMIA Filices,—spicata.*GEN. CHAR. *Capsules* naked, globose, two-valved.

SPEC. CHAR. Frond bipinnate, terminating in a compound cluster of fructification.

SYN. *Osmunda regalis*. *Linn. Sp. Pl.* 1521. *Hudf.**Fl. An.* 449. *With. Bot. Arr.* v. 3. 47.*Filix ramosa non dentata florida.* *Raii Syn.* 125.

OSMUNDA belongs to that tribe of ferns whose fructification, instead of being borne on the back of the frond, is produced by a metamorphosis, as it were, of the leaf itself; neither are the capsules bound with a ring, as in most of the dorserous ferns. See an excellent note of Dr. Stokes's *Bot. Arr.* v. 3. 46. and Dr. Smith's paper *de filicum generibus dorssiferarum*, in the 5th vol. of the Memoirs of the Turin Acad. p. 147.

The species before us occurs here and there in watery shady meadows and spongy bogs, making a conspicuous figure with its clusters of fructification in July or August. Its root is large and woody, a decoction or extract of which is esteemed in Switzerland very useful for curing the rickets. Fronds several, 3 or 4 feet high, not unlike in hue and figure to young ash trees, as Gerarde observes; they are bipinnate, the leaflets alternate or opposite occasionally, finely ferrated, and often slightly lobed at the base. The clusters are thrice compounded, bearing roundish tufts of innumerable bivalve capsules, full of minute seeds. A magnified figure of the capsule has, by accident, been omitted in our plate, but we shall take a future opportunity of exhibiting the generic character.

Ray, in the 1st edition of his Synopsis, p. 26, has described and figured young plants of this species as a new fern, by the name of *Hemionitis pumila trifolia vel quinquesolia maritima*.



Pteris aquilina L. f. *fructuosa* L.

MARCHANTIA polymorpha.

Star-headed Marchantia.

CRYPTOGAMIA Alga.

GEN. CHAR. Male. *Calyx* salver-shaped, with numerous *antheræ* imbedded in its disk.

Female. *Cal.* peltate, flowering beneath. *Capsules* bursting at their summit. *Seeds* attached to elastic fibres.

SPEC. CHAR. *Calyx* of the female flowers cloven into about ten narrow segments.

SYN. *Marchantia polymorpha.* Linn. *Sp. Pl.* 1603.
Huds. Fl. An. 519. *Witb. Bot. Arr.* v. 3. 158.
Sibtb. Oxon. 313. *Relb. Cant.* 420.

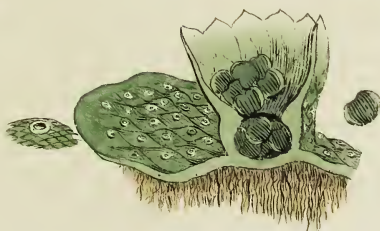
Lichen petræus latifolius, five *Hepatica fontana.*
Raii Syn. 115.

L. fontanus major, *stellatus æquè*, ac *umbellatus*, et *cyathophorus.* *Dill. Musc.* 523. t. 76. f. 6.

β *L. domesticus minor*, &c. *Ibid.* 527. t. 77. f. 7.

VERY common in damp places, about springs, wells, and shady moist court-yards. Gardeners find it troublesome in over-running the mould of their garden-pots. It is perennial, flowering about midsummer.

The fronds spread horizontally, creeping on the ground by means of dense fibrous radicles; they are bluntly lobed, of a dark shining green, and more or less reticulated. In the variety β they are smaller, more opaque, and scarcely reticulated at all. Their upper surface is studded with several pale dentated cups, half-filled with little green lenticular bodies, which are young plants, analogous to the stem-bulbs of the Orange Lily, and other viviparous plants, though mistaken by Dillenius and Linnæus for seeds. Hedwig has first ascertained the true nature of the fructification, the parts of which are indeed faithfully delineated by Dillenius, but he did not understand their œconomy. We have followed Hedwig's opinion, confirmed by observation, in the character given above. The hairs with which the seeds are connected appear from their elasticity to have a kind of spontaneous motion, and are well worth notice.



LICHEN Roccella.
Dyer's Lichen, or Orchall.

CRYPTOGAMIA *Alge.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, solid, cylindrical, without leaves, but little branched. Tubercles alternate, powdery.

SYN. Lichen Roccella. *Linn. Sp. Pl.* 1622. *Dickf. Crypt. fasc.* 3. 19. *Smith's Tour*, v. 1. 198.

Coralloides corniculatum fasciculare tinctorium, Fucitertis facie. *Dill. Musc.* 120. t. 17. f. 39.

MR. DICKSON has lately admitted this Lichen as a British native, on the authority of Mr. Gosselin, who found it in Guernsey. Our specimen was gathered by Lord Viscount Lewisham on Portland Island. It grows on maritime rocks, very common in the Mediterranean and the Levant. Linnæus had it too from China.

Its solid base is firmly fixed to the rocks, and produces a thick tuft of worm-like stems, round, acutely pointed, often curved, more or less branched, smooth, of a white, gray or brownish hue, and studded about their upper part with scattered tubercles, replete with white powder, which some have thought the seeds. Dillenius seems to think these tubercles may be only the spots where scutellæ have stood; in fact, the fructification of this species is not well known.

As an article of commerce it is of very great importance, being extremely valuable for dyeing wool or silk any shade of purple or crimson. For this purpose it is steeped in volatile alkali, commonly distilled from urine. Dillenius mentions 80l. sterling per ton as a great price for Orchall, being almost as much again as it cost in the Archipelago, so much better a judge was he of Lichens than of the comfortable emoluments of trade! It has since been sold at 1000l. in times of scarcity.



B Y S S U S aurea.

Golden Byssus.

CRYPTOGAMIA Algæ.

GEN. CHAR. Whole plant consisting of down or simple powder. *Frustrification* unknown.

SPEC. CHAR. Filaments simple or branched, closely matted together, powdery, orange-coloured.

SYN. Byssus aurea. *Linn. Sp. Pl.* 1638. *Huds. Fl. An.* 606. *With. Bot. Arr. v.* 3. 276. *Relb. Cant.* 446. *Sibth. Oxon.* 338.

B. aureus Derbienfis humifusus. *Raii Syn.* 56.

B. petræa crocea, glomerulis lanuginosis. *Dill. Musc.* 8. t. 1. f. 16.

THIS Byssus thrives best in a pure air, always in moist shady places; and although most abundant and luxuriant on the calcareous rocks and banks of Derbyshire, yet it is found occasionally on damp limestone buildings, and in chalk-pits in other parts of England. We procured it plentifully from a chalk-pit near Gad's-hill, Kent, in June last.

It often uniformly covers a space of many inches in diameter, and looks like a fine piece of orange-coloured cloth or velvet; sometimes the surface is more tufted, broken and irregular, and it frequently grows in a straggling manner, scattered over mosses. When of any considerable size, it is a very conspicuous and beautiful object. Its fine colour is not however permanent; for although this colour does not change (as authors report) immediately upon drying, but generally lasts till 5 or 6 weeks afterwards, yet at that period, or sometimes earlier, the whole plant becomes of a greenish gray, which never changes. The crust is often $\frac{1}{8}$ of an inch in thickness, and, from a curious specimen in Dr. Smith's possession, appears to grow in a concentric manner. The fibres are very fine, thick set, erect, mostly branched, and strongly matted together.



P Y R O L A rotundifolia.

Round-leaved Winter-green.

DE C A N D R I A Monogynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* 5-celled, bursting at the angles.

SPEC. CHAR. Stamina pointing upwards, style downwards.

SYN. *Pyrola rotundifolia.* *Linn. Sp. Pl.* 567. *Huds. Fl. An.* 175. *With. Bot. Arr.* 429.

Pyrola. *Raii Syn.* 363.

WE have already given the figures of two rare species of this pretty genus, and under the last (t. 158) promised as soon as possible to exhibit *P. rotundifolia*, which we are now enabled to do by means of a specimen gathered by the accurate and indefatigable Mr. Wigg, among bushes on a common at Bradwell not far from Yarmouth, where the plant grows sparingly, and is elsewhere, even among its favourite mountains of the north, very rarely to be found. It flowers mostly about July, and is perennial.

The root and leaves agree very much with those of *P. minor*, except that the latter, as well as the flowers, are larger. The calyx is longer, and more lanceolate, but the essential difference consists in the stamina being all bent, as if for shelter, towards the upper side of the flower, while the style (much longer than that of *P. minor*) is curved downwards in as singular a manner, and again recurved to catch the pollen. The stigma terminates in five blunt tubercles.



Nov 1 1794. Botanical Society of London.

DIANTHUS Caryophyllus.

*Clove Pink, or Carnation.**DECANDRIA Digynia.*

GEN. CHAR. *Cal.* cylindrical, of one leaf, with about 4 scales at the base. *Petals* 5, furnished with claws. *Caps.* cylindrical, one-celled.

SPEC. CHAR. Flowers solitary. Scales of the calyx almost rhomboid, and very short. Petals notched, beardless.

SYN. *Dianthus Caryophyllus.* *Linn. Sp. Pl.* 587. *Huds. Fl. An.* 184. *With. Bot. Arr.* 441. *Smith in Linn. Transf. v.* 2. 299.

Caryophyllus simplex flore minore pallido rubente.
Raii Syn. 336.

GATHERED on the walls of Rochester castle in June last. It is plentiful on walls in that neighbourhood, and sometimes occurs about those of other old towns. Ray and Hudson take it for an outcast of gardens. Indeed it varies in size and colour, like all plants so circumstanced. Ours is surely the plant of Ray, and, we think, ought to be esteemed the real original species, rather than a variety as marked by Mr. Hudson. It agrees precisely with the specimens of Linnæus.

The root is perennial, and runs deep into the mortar, producing several tufts of channelled glaucous leaves, finely denticulated a little above the base, but in the upper part perfectly entire and smooth at the margin. The stem is panicled, bearing many solitary (not fasciculated) flowers, of a light red or flesh-colour; their petals unequally notched, smooth at the orifice; calyx striated, with 4 scales not a third of its length, the 2 outermost rhomboid, 2 innermost wedge-shaped, even broader than they are long, with a small point, all of them ribbed. The stamina are sometimes very short, and perhaps in that case abortive, as in *Arenaria dianthoides*, *Smith Ic. t.* 16. The styles are commonly long, recurved, and downy on the upper side.

What Mr. Doody meant by a "hairy species, frequent in Kent, and found likewise in other places," distinct from the above, we are at a loss to determine.

POTAMOGETON pufillum.

*Small Pond-weed.**TETRANDRIA Tetragynia.*GEN. CHAR. *Cal.* none. *Petals* 4. *Style* none. *Seeds* 4.

SPEC. CHAR. Leaves linear, opposite and alternate, distinct, spreading from the base. Stem cylindrical.

SYN. *Potamogeton pufillum.* *Linn. Sp. Pl.* 184.*Huds. Fl. An.* 77. *With. Bot. Arr.* 176. *Relb. Cant.* 73. *Sibth. Oxon.* 66.P. pufillum, gramineo folio, caule tereti. *Raii Syn.* 150.

NOT very uncommon in ponds and ditches throughout England. The root has all the appearance of being perennial (though Linnæus marks it as annual), and several fibres are thrown out from the lower part of the stem, which is round, very slender, and alternately branched above. Leaves linear, very narrow, mostly alternate, but opposite under every flower-stalk, sessile, spreading from the very base, and not sheathing the stem, their margin perfectly smooth and entire. Stipulæ membranous, lanceolate, inserted above each leaf, and embracing the stem. Flower-stalks axillary, frequently terminal till the stem shoots beyond them, shorter than the leaves, each bearing a spike of 3 or 4 greenish flowers in the middle of summer.

The able authors of the *Bot. Arrangement* have in this instance not translated the specific character of Linnæus with their usual accuracy. Neither do we conceive the scales mentioned in Dr. Withering's description to be *bractææ*, or belonging to the flower-stalks; it is evident, from an inspection of the plant, they are real *stipulæ intrafoliaceæ*.



No. 11994. Collected by J. Lewis. Linn.

SCIRPUS fluitans.

Floating Club-rush.

TRIANDRIA Monogynia.

GEN. CHAR. *Glumes* chaffy, imbricated every way, all fertile. *Cor.* none. *Seed* 1, beardless.

SPEC. CHAR. Flower stalks round, naked, alternate. Stem leafy, flaccid.

SYN. *Scirpus fluitans.* *Linn. Sp. Pl.* 71. *Huds. Fl. An.* 18. *With. Bot. Arr.* 48. *Sibth. Oxon.* 23.

Sc. *Equiseti capitulo minori.* *Raii Syn.* 431.

THIS occurs in ditches, and in little pools upon grassy commons and heaths, the water of which is apt to be dried up in summer, but is by no means a common species. It may be found on St. Faith's bogs near Norwich, on Hounslow Heath, and Epping Forest, flowering in June and July.

The root is perennial, and the stems throw out many long radicles as they stretch in a floating position many together over the surface of the water. The leaves are alternate, sheathing at their base, and then much divaricated, partly floating, partly above the water. The spikes stand erect above the surface, and, though small, are conspicuous by their number and whitish colour. Each consists of but few flowers, whose glumes are not much shorter than the stamina, and the two lowermost are particularly large, so as to appear like bractæ; but they have always parts of fructification belonging to them. The stigmata are only two in number.



New's, 1792. Published by T. Power by London

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Note. The *Orobanche ramosa*, tab. 184, is drawn from a specimen whose root had been wounded by some insect, and is therefore more swelled than in its natural state. *Mr. Woodward.*





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